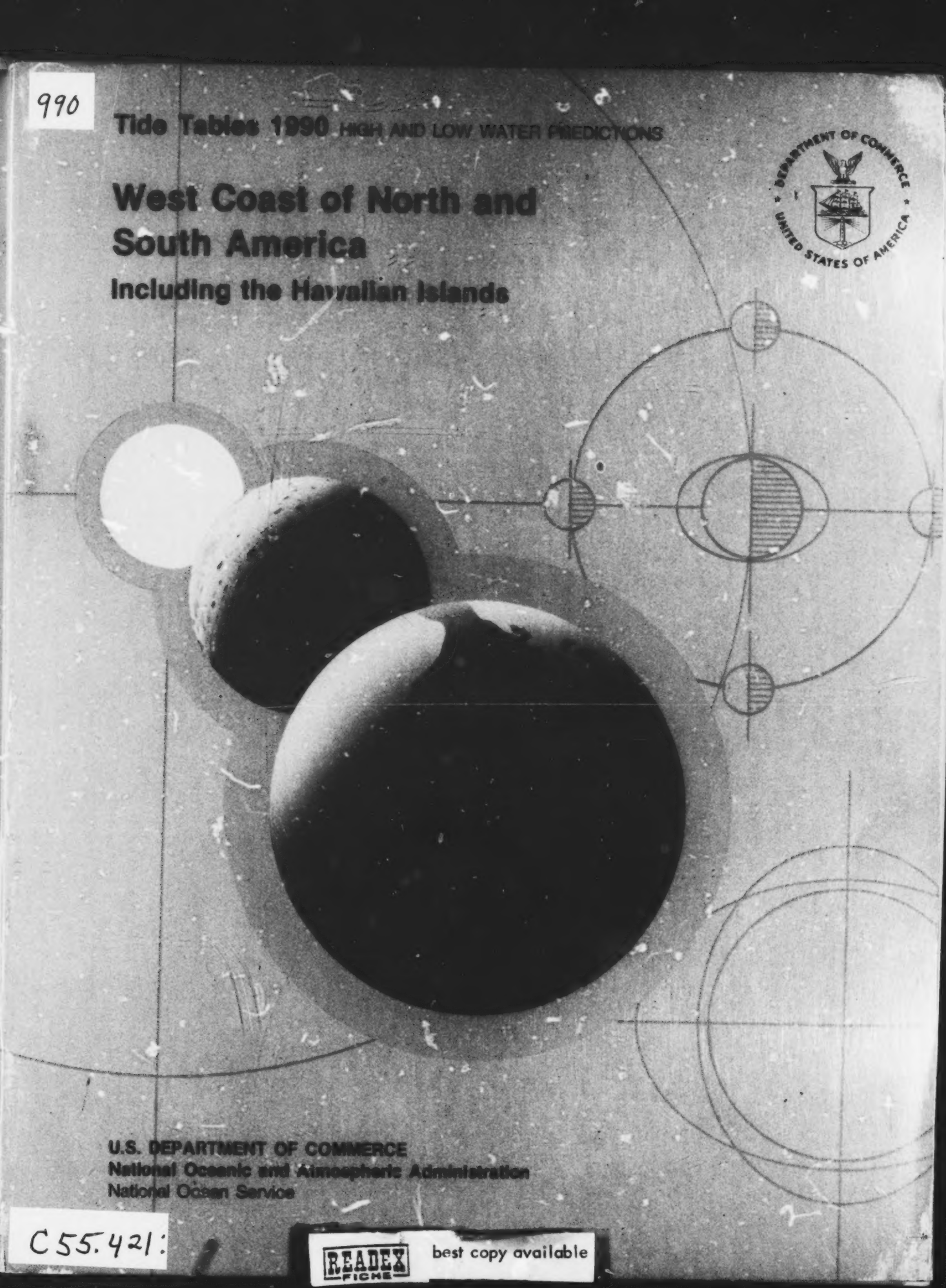
990

Tide Tables 1990 HIGH AND LOW WATER PREDICTIONS

West Coast of North and South America

Including the Hawaiian Islands

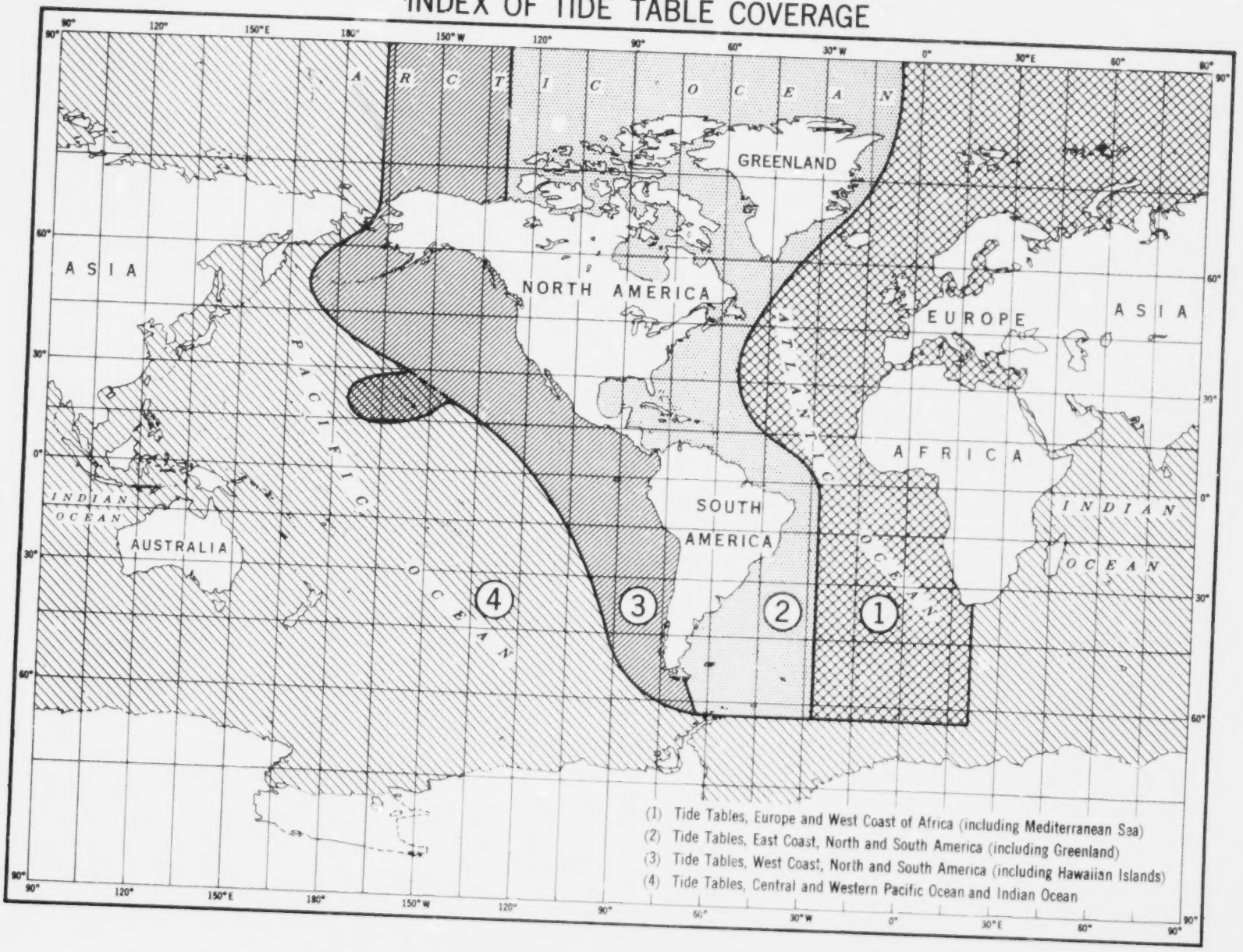


U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service

C55.421:

READEX FICHE best copy available

INDEX OF TIDE TABLE COVERAGE



Tide Tables 1990

HIGH AND LOW WATER PREDICTIONS

West Coast of North and South America

Including the Hawaiian Islands

Issued 1989

U.S. DEPARTMENT OF COMMERCE
Robert A. Mosbacher, Secretary
National Oceanic and Atmospheric Administration
William E. Evans, Under Secretary
National Ocean Service
Thomas J. Maginnis, Assistant Administrator

Tide Tables, Tidal Current Tables, Tidal Current Charts, United States Coast Pilots, Distance Tables, and Nautical Charts may be ordered from the National Ocean Service, Distribution Division, 6501 Lafayette Ave., Riverdale, MD 20840. A list of authorized sales agents is published in the Nautical Chart Catalogs or may be obtained on request from the National Ocean Service. The publications may also be purchased across-the-counter at the Distribution Division office at 6501 Lafayette Ave., Riverdale, MD.

Technical questions relating to tide and current predictions, as well as requests for special predictions, should be addressed to the National Ocean Service, Estuarine and Ocean Physics Branch, 6001 Executive Blvd., Rockville, MD 20852, (301) 443-8060. Technical questions relating to other publications and nautical charts should be addressed to the National Ocean Service, Marine Chart Branch, 6001 Executive Blvd., Rockville, MD 20852, (301) 443-8874.

Corrections to this publication, after the date of printing, may appear in the quarterly summaries numbered 13, 26, 39, and 52 of the Notice of Mariners. They may also appear in the Local Notice to Mariners, published weekly, by the various United States Coast Guard Districts.

CONTENTS

Page

Index map of tide table coverage ..... **Inside front cover**

Astronomical data ..... **Inside back cover**

Important notice ..... **IV**

Introduction ..... **V**

List of reference stations ..... **VI**

Table 1.—Daily tide predictions.
- Explanation of table **1**
- Typical tide curves for United States ports **3**
- Daily predictions for reference stations **4**

Table 2.—Tidal differences and other constants.
- Explanation of table **169**
- Tidal differences and other constants **171**

Table 3.—Height of tide at any time.
- Explanation of table **193**
- Height of tide at any time **195**

Table 4.—Local mean time of sunrise and sunset.
- Explanation of table **197**
- Sunrise and sunset **198**

Table 5.—Reduction of local mean time to standard time **207**

Table 6.—Moonrise and moonset.
- Explanation of table **209**
- Moonrise and moonset **210**

Table 7.—Conversion of feet to meters **217**

List of publications by the National Ocean Service relating to tides and tidal currents **219**

Glossary of terms **221**

Index to stations **227**

IMPORTANT NOTICES

For the most part, tide predictions for U.S. reference stations are based upon analyses of tide observations for periods of at least one year. Since the extremes of meteorological conditions have been excluded from the analyses and predictions, the predicted tidal heights should be considered those expected under average weather conditions. The mariner must be cautioned that during times when weather conditions differ from what is considered average for the area, corresponding differences between predicted levels and those actually observed will be noted. Generally, prolonged onshore winds or a low barometric pressure can produce higher levels than predicted, while the opposite can result in lower levels than those predicted.

Exclusive of weather conditions, the astronomical tide is subject to range variations which should be noted. Decreased ranges may be expected near the times when the Moon is in apogee (apogean tides) or in quadrature (neap tides) and increased ranges when the Moon is in perigee (perigean tides) or in a new or full position (spring tides). A larger diurnal range may also result when the Moon is in its maximum declination (tropic tides). The actual range will depend upon the extent to which combinations of these positions reinforce or detract one from the other. The effect of these astronomical lineups is included in the predictions and may be apparent upon inspection.

The mariner may be kept aware of the times of these astronomical events by referring to the astronomical data listed in this book. He should realize, however, that there is generally a time lag from a few hours to several days from the time of the astronomical event to the time of the resultant tide. During times of storm surges or when extreme weather conditions are imminent, it would be prudent for the mariner to keep closely advised by local weather forecasts as they relate to the effects upon the tide levels.

INTRODUCTION

Tide tables for the use of mariners have been published by the National Ocean Service (formerly the Coast and Geodetic Survey) since 1853. For a number of years these tables appeared as appendixes to the annual reports of the Superintendent of the Survey, and consisted of more or less elaborated means for enabling the mariner to make his own prediction of tides as occasion arose.

The first tables to give predictions for each day were those for the year 1867. They gave the times and heights of high waters only and were published in two separate parts, one for the Atlantic coast and the other for the Pacific coast of the United States. Together they contained daily predictions for 19 stations and tidal differences for 124 stations. A few years later predictions for the low waters were also included, and for the year 1896 the tables were extended to include the entire maritime world, with full predictions for 70 ports and tidal differences for about 3,000 stations.

The tidal tables are now issued in four volumes, as follows: *Europe and West Coast of Africa (including the Mediterranean Sea); East Coast of North and South America (including Greenland); West Coast of North and South America (including the Hawaiian Islands); Central and Western Pacific Ocean and Indian Ocean.* Together, they contain daily predictions for 198 reference ports and differences and other constants for about 6,000 stations.

This edition of the *Tide Tables, West Coast of North and South America* contains full daily predictions for 40 reference ports and differences and other constants for about 1,100 stations in North America, South America, and the Hawaiian Islands. It also contains a table for obtaining the approximate height of the tide at any time, a table of local mean time of sunrise and sunset for every 5th day of the year for different latitudes, a table for the reduction of local mean time to standard time, a table of moonrise and moonset for 6 places, a table of the Greenwich mean time of the Moon's phases, apogee, perigee, greatest north and south and zero declination, and the time of the solar equinoxes and solstices, and a glossary of terms.

Up to and including the tide tables for the year 1884, all the tide predictions were computed by means of auxiliary tables and curves constructed from the results of tide observations at the different ports. From 1885 to 1911, inclusive, the predictions were generally made by means of the Ferrel tide-predicting machine. From 1912 to 1965, inclusive, they were made by means of the Coast and Geodetic Survey tide predicting machine No. 2. Since 1966, predictions have been made by electronic computer.

In the preparation of these tables all available observations were used. In some cases, however, the observations were insufficient for obtaining final results, and as further information becomes available it will be included in subsequent editions. All persons using these tables are invited to send information or suggestions for increasing their usefulness to the Assistant Administrator, National Ocean Service, Rockville, MD 20852, U.S.A.

In accordance with cooperative arrangements for the exchange of tide predictions, the authorities named below have furnished predictions for the following stations in this issue:

Canadian Hydrographic Service.—Victoria and Vancouver, B.C.

Instituto Hidrografico de la Armada, Chile.—Antofagasta, Cabo de Hornos, Puerto Montt, Punta Arenas, and Valparaiso.

LIST OF REFERENCE STATIONS

Name of station	Datum below mean sea-level	Page	Name of station	Datum below mean sea-level	Page
Aberdeen, Washington	5.6	88	Nikishka, Alaska	11.2	132
Anchorage, Alaska	16.0	136	Nushagak Bay, Alaska	10.3	156
Antofagasta, Chile	2.6	20	Port Townsend, Washington	4.9	92
Astoria, Oregon	*4.4	84	Puerto Montt, Chile	11.8	12
Balboa, Panama	8.4	44	Punta Arenas, Chile	4.0	8
Buenaventura, Columbia	6.5	40	Puntarenas, Costa Rica	4.6	48
Callao, Peru	1.7	28	St. Michael, Alaska	2.0	160
Cabo de Hornos, Chile	4.4	4	Salina Cruz,Mexico	1.9	56
Cordova, Alaska	6.7	120	San Diego, California	2.9	64
Crescent City, California	3.8	80	San Francisco, California	3.1	72
Guayaquil, Ecuador	*6.3	36	Seattle, Washington	6.6	96
Guaymas, Mexico	1.5	60	Seldovia, Alaska	9.5	128
Honolulu, Hawaii	0.8	164	Sitka, Alaska	5.2	116
Humboldt Bay, California	3.7	76	Sweeper Cove, Alaska	2.1	148
Juneau, Alaska	8.5	112	Talara, Peru	2.6	32
Ketchikan, Alaska	8.0	108	Unalaska, Alaska	2.2	144
Kodiak, Alaska	4.3	140	Valdez, Alaska	6.4	124
La Union, El Salvador	5.1	52	Valparaiso, Chile	3.0	16
Los Angeles, California	2.8	68	Vancouver, Bristish Ccolumbia	10.0	104
Massacre Bay, Alaska	1.9	152	Victoria, British Columbia	6.1	100
Matarani, Peru	1.4	24			

* Datum below mean river level.

Each datum figure above represents the difference in elevation between the local mean sea (or river) level and the reference level from which the predicted heights in table 1 were calculated.

Local mean sea level datum should not be confused with the National Geodetic Vertical Datum which is the datum of the geodetic level net of the United States. Relationships between geodetic and local tidal datums are published in connection with the tidal bench mark data of the National Ocean Service.

TABLE 1.—DAILY TIDE PREDICTIONS

EXPLANATION OF TABLE

This table contains the predicted times and heights of the high and low waters for each day of the year at a number of places which are designated as *reference stations*. By using tidal differences from table 2, one can calculate the approximate times and heights of the tide at many other places which are called *subordinate stations*. Instructions on the use of the tidal differences are found in the explanation of table 2.

High water is the maximum height reached by each rising tide, and low water is the minimum height reached by each falling tide. High and low waters can be selected from the predictions by the comparison of consecutive heights. Because of diurnal inequality at certain places, however, there may be a difference of only a few tenths of a foot between one high water and low water of a day, but a marked difference in height between the other high water and low water. It is essential, therefore, in using the tide tables to note carefully the heights as well as the times of the tides.

Time.—The kind of time used for the predictions at each reference station is indicated by the time meridian at the bottom of each page. Daylight saving time is not used in this publication.

Datum.—The datum from which the predicted heights are reckoned is the same as that used for the charts of the locality. The datum for the Pacific coast of the United States (including Hawaii and Alaska) is the mean of the lower of the two low waters of each day. For foreign coasts a datum approximating to mean low water springs, Indian spring low water, or the lowest possible low water is generally used. The depression of the datum below mean sea level for each of the reference stations of this volume is given on the preceding page.

Depth of water.—The nautical charts published by the United States and other maritime nations show the depth of water as referred to a low water datum corresponding to that from which the predicted tidal heights are reckoned. To find the actual depth of water at any time the height of the tide should be added to the charted depth. If the height of the tide is negative—that is, if there is a minus sign (−) before the tabular height—it should be subtracted from the charted depth. For any time between high and low water, the height of the tide may be estimated from the heights of the preceding and following tides, or table 3 may be used. The reference stations in table 1 now contain the heights in meters as well as feet.

Variation in sea level.—Changes in winds and barometric conditions cause variations in sea level from day to day. In general, with onshore winds or a low barometer the heights of both the high and low waters will be higher than predicted while with offshore winds or a high barometer they will be lower. There are also seasonal variations in sea level, but these variations have been included in the predictions for each station. At ocean stations the seasonal variation in sea level is usually less than half a foot.

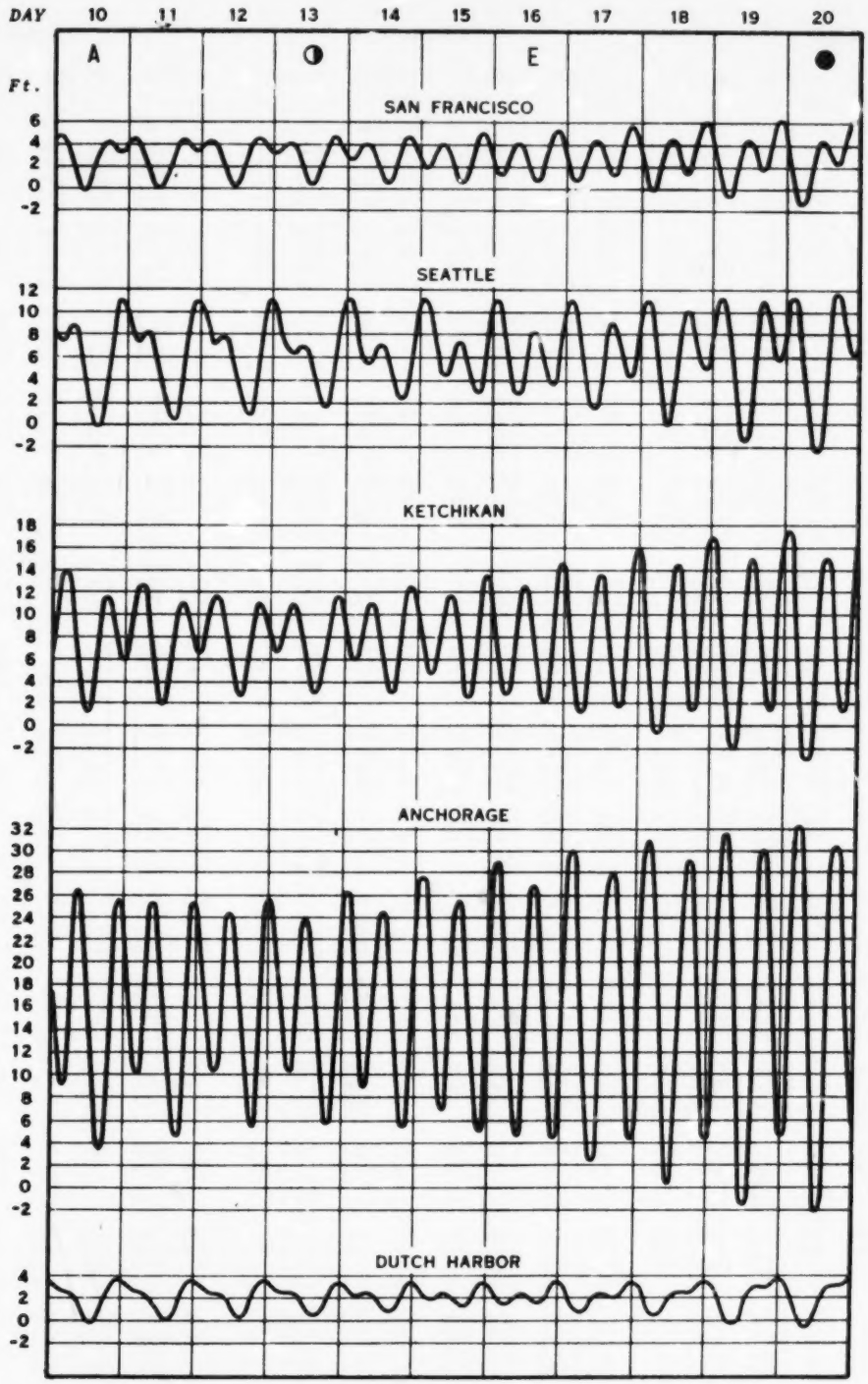
At stations on tidal rivers the average seasonal variation in river level due to freshets and droughts may be considerably more than a foot. The predictions for these stations include an allowance for this seasonal variation representing average freshet and drought conditions. Unusual freshets or droughts, however, will cause the tides to be higher or lower, respectively, than predicted.

Number of tides.—There are usually two high and two low waters in a day. Tides follow the Moon more closely than they do the Sun, and the lunar or tidal day is about 50 minutes longer than the solar day. This causes the tide to occur later each day, and a tide that has occurred near the end of one calendar day will be followed by a corresponding tide that may skip the next day and occur in the early morning of the third day. Thus on certain days of each month only a single high or a single low water occurs. At some stations, during portions of each month, the tide becomes diurnal—that is, only one high and one low water will occur during the period of a lunar day.

Relation of tide to current.—In using these tables of tide predictions it must be borne in mind that they give the times and heights of high and low waters and not the times of turning of the current or slack water. For stations on the outer coast there is usually but little difference between the time of high or low water and the beginning of ebb or flood current, but for places in narrow channels, landlocked harbors, or

on tidal rivers, the time of slack water may differ by several hours from the time of high or low water stand. The relation of the times of high and low water to the turning of the current depends upon a number of factors, so no simple or general rule can be given. For the predicted times of slack water, and other current data, reference should be made to the tidal current tables published by the National Ocean Service in two separate volumes, one for the Atlantic coast of North America and the other for the Pacific coast of North America and Asia.

Typical tide curves.—The variations in the tide from day to day and from place to place are illustrated on the opposite page by the tide curves for representative ports along the Pacific coast of the United States. It will be noted that one of the chief characteristics of the tide in this region is diurnal inequality, i.e., the difference in heights of successive high waters or low waters. The largest inequality is in the low waters although at Seattle there is also considerable difference between the two high waters on certain days. The importance of this inequality at Seattle is brought out by the curve which shows that at times the two high waters of a day differ by over 4 feet and the two low waters differ by more than 8 feet. At Ketchikan and Anchorage the inequality is less pronounced because of the large range of tide. In these localities the principal variations in the tide follow the changes in the Moon's phase and distance. The tide at Anchorage is one of the largest in the world. At Dutch Harbor the type of tide is such that it is semidiurnal around the times the Moon is on the Equator, but becomes diurnal around the times of maximum north or south declination of the Moon.



A discussion of these curves is given on the preceding page.

Lunar data: A - Moon in apogee
◑ - last quarter
E - Moon on Equator
● - new Moon

CABO de HORNOS, CHILE, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm
1	0026	3.2	99
M	0651	7.4	225
	1346	1.6	49
	2000	5.6	170
2	0118	3.1	96
Tu	0738	7.2	218
	1426	1.8	54
	2042	5.8	178
3	0216	3.0	92
W	0830	6.8	208
	1506	2.0	60
	2127	6.2	188
4	0320	2.9	87
Th	0928	6.5	197
	1550	2.2	67
	2215	6.5	199
5	0429	2.6	79
F	1033	6.1	185
	1636	2.5	75
	2306	6.9	211
6	0540	2.3	69
Sa	1143	5.7	175
	1728	2.7	83
7	0000	7.3	222
Su	0650	1.9	58
	1255	5.5	168
	1823	2.9	89
8	0056	7.6	233
M	0757	1.5	46
	1405	5.4	166
	1921	3.0	92
9	0153	7.9	241
Tu	0859	1.2	37
	1509	5.5	167
	2020	3.1	93
10	0249	8.1	247
W	0956	1.0	30
	1607	5.5	169
	2118	3.0	91
11	0344	8.2	250
Th	1049	0.9	28
	1700	5.6	172
	2214	3.0	90
12	0438	8.2	249
F	1139	1.0	29
	1750	5.8	176
	2308	2.9	89
13	0529	8.0	244
Sa	1225	1.1	34
	1837	5.9	179
14	0002	2.9	88
Su	0619	7.7	235
	1309	1.3	41
	1922	6.0	182
15	0055	3.0	90
M	0707	7.3	222
	1351	1.7	51
	2006	6.1	185
16	0148	3.0	91
Tu	0755	6.8	208
	1431	2.0	62
	2049	6.2	188
17	0244	3.1	93
W	0845	6.3	193
	1509	2.4	73
	2131	6.3	191
18	0341	3.1	93
Th	0937	5.8	178
	1546	2.8	84
	2213	6.4	194
19	0441	3.0	91
F	1033	5.4	166
	1625	3.1	94
	2256	6.5	197
20	0541	2.9	88
Sa	1133	5.2	157
	1705	3.3	102
	2341	6.6	201
21	0641	2.7	83
Su	1235	5.0	151
	1749	3.5	107
22	0027	6.8	206
M	0736	2.5	77
	1335	4.9	149
	1836	3.6	110
23	0115	6.9	211
Tu	0828	2.3	70
	1430	4.9	149
	1925	3.6	110
24	0202	7.1	217
W	0915	2.1	64
	1519	5.0	151
	2013	3.5	108
25	0248	7.3	223
Th	0958	1.9	58
	1603	5.1	155
	2100	3.4	105
26	0333	7.5	228
F	1039	1.8	54
	1644	5.2	159
	2147	3.3	101
27	0418	7.6	232
Sa	1119	1.6	50
	1724	5.4	165
	2235	3.2	97
28	0502	7.6	233
Su	1157	1.6	49
	1804	5.6	172
	2324	3.0	92
29	0548	7.5	230
M	1235	1.7	51
	1844	5.9	180
30	0017	2.9	87
Tu	0636	7.3	224
	1314	1.8	55
	1926	6.2	189
31	0113	2.7	82
W	0727	7.0	214
	1353	2.0	62
	2009	6.5	199

FEBRUARY

Day	Time	Height ft	Height cm
1	0213	2.5	77
Th	0823	6.6	201
	1435	2.3	70
	2056	6.9	209
2	0317	2.4	72
F	0924	6.2	188
	1520	2.6	79
	2146	7.2	218
3	0425	2.2	66
Sa	1031	5.8	177
	1610	2.9	88
	2241	7.4	225
4	0535	1.9	59
Su	1141	5.5	169
	1706	3.1	94
	2339	7.6	232
5	0642	1.7	52
M	1251	5.4	165
	1806	3.2	98
6	0039	7.8	237
Tu	0747	1.5	46
	1356	5.4	165
	1908	3.2	98
7	0139	7.9	241
W	0846	1.4	42
	1455	5.5	168
	2009	3.1	96
8	0236	8.0	243
Th	0940	1.3	40
	1548	5.7	173
	2107	3.0	92
9	0331	7.9	242
F	1029	1.3	41
	1637	5.8	178
	2202	2.9	89
10	0422	7.8	238
Sa	1113	1.5	45
	1721	6.0	183
	2254	2.9	87
11	0511	7.6	231
Su	1155	1.7	51
	1804	6.1	187
	2345	2.8	86
12	0558	7.3	221
M	1234	1.9	59
	1844	6.3	191
13	0036	2.8	86
Tu	0644	6.8	208
	1310	2.3	69
	1923	6.4	194
14	0126	2.9	87
W	0730	6.4	195
	1346	2.6	79
	2002	6.4	196
15	0217	2.9	88
Th	0819	6.0	182
	1420	3.0	90
	2041	6.5	198
16	0310	2.9	88
F	0910	5.6	170
	1456	3.2	99
	2122	6.5	199
17	0406	2.9	87
Sa	1005	5.3	161
	1533	3.5	107
	2206	6.6	201
18	0503	2.8	85
Su	1104	5.1	154
	1615	3.7	112
	2253	6.7	204
19	0601	2.7	82
M	1203	5.0	151
	1703	3.7	114
	2344	6.8	208
20	0656	2.5	77
Tu	1300	4.9	150
	1754	3.7	114
21	0035	7.0	214
W	0747	2.4	72
	1351	5.0	153
	1848	3.6	111
22	0126	7.2	220
Th	0834	2.2	66
	1437	5.2	157
	1941	3.5	106
23	0215	7.4	226
F	0917	2.0	61
	1520	5.4	164
	2033	3.3	100
24	0303	7.6	231
Sa	0958	1.9	57
	1602	5.6	172
	2125	3.0	92
25	0351	7.6	233
Su	1038	1.8	55
	1642	5.9	181
	2217	2.8	85
26	0439	7.6	231
M	1117	1.8	56
	1723	6.3	191
	2311	2.5	77
27	0530	7.4	226
Tu	1156	2.0	60
	1805	6.6	202
28	0007	2.3	70
W	0622	7.1	217
	1237	2.2	67
	1849	7.0	212

MARCH

Day	Time	Height ft	Height cm
1	0105	2.1	64
Th	0718	6.7	205
	1320	2.5	76
	1937	7.3	221
2	0207	2.0	60
F	0819	6.3	192
	1406	2.8	85
	2028	7.4	227
3	0312	1.8	56
Sa	0923	5.9	181
	1457	3.1	93
	2123	7.6	231
4	0419	1.8	54
Su	1031	5.7	173
	1553	3.2	99
	2223	7.6	233
5	0527	1.7	52
M	1140	5.5	169
	1656	3.3	102
	2325	7.7	235
6	0633	1.7	51
Tu	1245	5.5	169
	1800	3.3	102
7	0028	7.7	236
W	0733	1.6	49
	1344	5.6	172
	1904	3.2	99
8	0128	7.7	236
Th	0827	1.6	50
	1437	5.8	177
	2004	3.1	94
9	0224	7.7	234
F	0916	1.7	52
	1524	6.0	183
	2059	3.0	90
10	0316	7.5	229
Sa	0959	1.8	56
	1607	6.2	189
	2141	2.8	86
11	0405	7.3	223
Su	1039	2.0	62
	1647	6.4	194
	2241	2.7	83
12	0451	7.0	214
M	1116	2.3	69
	1725	6.5	198
	2329	2.7	81
13	0536	6.7	203
Tu	1150	2.6	78
	1801	6.6	201
14	0016	2.6	80
W	0622	6.3	192
	1224	2.9	88
	1837	6.7	203
15	0102	2.6	80
Th	0708	5.9	181
	1257	3.2	97
	1913	6.7	203
16	0150	2.7	81
F	0756	5.6	171
	1330	3.5	106
	1951	6.7	203
17	0240	2.7	82
Sa	0847	5.3	163
	1405	3.7	113
	2033	6.7	203
18	0332	2.7	82
Su	0941	5.2	157
	1444	3.8	117
	2119	6.7	204
19	0427	2.7	82
M	1037	5.0	153
	1530	3.9	120
	2209	6.8	206
20	0523	2.6	80
Tu	1133	5.0	152
	1623	3.9	119
	2303	6.9	209
21	0616	2.5	77
W	1225	5.1	155
	1721	3.8	116
	2357	7.0	214
22	0705	2.4	72
Th	1313	5.2	160
	1820	3.6	110
23	0051	7.2	219
F	0750	2.2	67
	1356	5.5	168
	1917	3.3	102
24	0143	7.3	224
Sa	0832	2.1	63
	1438	5.8	178
	2013	3.0	91
25	0235	7.4	227
Su	0913	2.0	61
	1520	6.3	191
	2108	2.6	80
26	0327	7.4	226
M	0954	2.0	62
	1601	6.7	203
	2203	2.2	68
27	0420	7.3	222
Tu	1034	2.1	65
	1644	7.1	216
	2258	1.9	58
28	0514	7.1	215
W	1116	2.4	72
	1729	7.4	227
	2356	1.6	50
29	0611	6.7	205
Th	1200	2.6	79
	1816	7.7	234
30	0055	1.5	45
F	0710	6.4	194
	1248	2.9	88
	1907	7.8	239
31	0157	1.4	44
Sa	0813	6.0	184
	1339	3.1	96
	2002	7.8	239

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0302	1.5	45	16 M	0259	2.5	77
	0919	5.8	177		0915	5.0	153
	1437	3.3	102		1356	4.0	123
	2103	7.8	238		2034	6.8	207
2 M	0408	1.5	47	17 Tu	0351	2.6	78
	1026	5.7	173		1009	5.0	152
	1541	3.4	105		1447	4.0	123
	2207	7.7	235		2127	6.8	207
3 Tu	0514	1.6	49	18 W	0443	2.5	77
	1132	5.7	173		1101	5.1	154
	1649	3.4	105		1548	4.0	122
	2312	7.6	231		2223	6.8	208
4 W	0616	1.7	52	19 Th	0533	2.4	74
	1232	5.8	177		1150	5.2	160
	1757	3.3	102		1653	3.8	116
					2321	6.9	211
5 Th	0015	7.5	228	20 F	0620	2.3	71
	0711	1.8	54		1235	5.5	169
	1325	6.0	183		1758	3.5	107
	1900	3.1	96				
6 F	0114	7.3	224	21 Sa	0018	7.0	213
	0800	1.9	58		0705	2.2	68
	1412	6.2	189		1317	6.0	182
	1958	3.0	90		1859	3.1	95
7 Sa	0208	7.2	218	22 Su	0115	7.1	215
	0844	2.1	63		0747	2.2	67
	1454	6.4	196		1359	6.4	196
	2052	2.8	84		1957	2.6	80
8 Su	0259	7.0	212	23 M	0211	7.1	215
	0922	2.3	69		0829	2.2	67
	1533	6.6	202		1442	7.0	212
	2141	2.6	80		2054	2.1	64
9 M	0346	6.7	204	24 Tu	0307	7.0	212
	0958	2.5	77		0912	2.3	70
	1609	6.8	207		1525	7.4	227
	2227	2.5	76		2151	1.6	50
10 Tu	0432	6.4	195	25 W	0404	6.8	208
	1032	2.8	85		0955	2.4	74
	1644	6.9	210		1610	7.8	239
	2311	2.4	73		2247	1.3	39
11 W	0516	6.1	186	26 Th	0501	6.6	201
	1104	3.1	93		1040	2.6	80
	1718	7.0	212		1658	8.1	248
	2355	2.4	72		2345	1.1	33
12 Th	0601	5.8	178	27 F	0559	6.3	193
	1136	3.3	102		1128	2.9	87
	1752	7.0	212		1749	8.2	251
13 F	0038	2.4	73	28 Sa	0043	1.0	31
	0647	5.6	170		0700	6.1	185
	1208	3.6	109		1220	3.1	94
	1828	6.9	211		1843	8.2	251
14 Sa	0123	2.4	74	29 Su	0144	1.1	33
	0734	5.3	163		0802	5.9	179
	1240	3.8	116		1316	3.3	100
	1906	6.9	209		1941	8.1	246
15 Su	0210	2.5	76	30 M	0247	1.2	38
	0823	5.2	157		0906	5.7	175
	1315	3.9	120		1419	3.4	104
	1947	6.8	207		2043	7.8	238

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0350	1.4	44	16 W	0313	2.4	72
	1011	5.7	175		0933	5.0	153
	1528	3.5	106		1412	4.0	121
	2148	7.5	230		2048	6.8	208
2 W	0452	1.6	50	17 Th	0401	2.4	72
	1113	5.8	178		1023	5.2	158
	1639	3.4	104		1519	3.9	119
	2253	7.3	222		2145	6.7	205
3 Th	0549	1.8	56	18 F	0448	2.4	72
	1209	6.1	185		1110	5.5	167
	1748	3.2	99		1630	3.7	112
	2356	7.0	214		2247	6.7	203
4 F	0640	2.0	62	19 Sa	0534	2.4	72
	1258	6.3	192		1155	5.9	180
	1852	3.1	93		1740	3.3	100
					2350	6.6	201
5 Sa	0055	6.8	206	20 Su	0620	2.4	72
	0725	2.2	68		1240	6.4	196
	1342	6.6	200		1845	2.8	85
	1950	2.8	85				
6 Su	0150	6.5	198	21 M	0053	6.5	199
	0806	2.5	75		0705	2.4	73
	1421	6.8	207		1325	7.0	213
	2041	2.6	78		1946	2.2	67
7 M	0241	6.3	191	22 Tu	0154	6.5	197
	0842	2.7	82		0750	2.5	75
	1458	7.0	213		1410	7.5	229
	2128	2.4	72		2045	1.6	50
8 Tu	0329	6.1	185	23 W	0254	6.4	195
	0917	2.9	89		0836	2.6	78
	1533	7.1	217		1457	8.0	244
	2212	2.2	67		2141	1.1	35
9 W	0414	5.9	179	24 Th	0352	6.3	192
	0950	3.1	96		0924	2.7	81
	1607	7.2	219		1545	8.3	254
	2253	2.1	65		2237	0.9	26
10 Th	0458	5.7	173	25 F	0450	6.2	188
	1022	3.3	102		1013	2.8	84
	1641	7.2	220		1636	8.5	260
	2334	2.1	63		2333	0.7	22
11 F	0542	5.5	167	26 Sa	0547	6.0	183
	1054	3.5	108		1104	2.9	88
	1715	7.2	219		1728	8.5	260
12 Sa	0015	2.1	64	27 Su	0030	0.8	23
	0625	5.3	162		0644	5.9	179
	1125	3.7	113		1158	3.0	92
	1751	7.1	217		1823	8.4	255
13 Su	0057	2.2	66	28 M	0127	0.9	28
	0710	5.2	157		0743	5.8	176
	1158	3.8	117		1257	3.1	96
	1829	7.1	215		1921	8.1	246
14 M	0141	2.2	68	29 Tu	0225	1.2	36
	0756	5.1	154		0843	5.8	176
	1233	3.9	119		1400	3.3	100
	1910	7.0	213		2021	7.6	233
15 Tu	0226	2.3	71	30 W	0322	1.5	46
	0844	5.0	152		0942	5.8	178
	1317	4.0	121		1509	3.3	102
	1956	6.9	210		2123	7.2	220
				31 Th	0418	1.8	55
					1040	6.0	182
					1621	3.3	101
					2227	6.8	206

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0511	2.1	64	16 Sa	0401	2.4	72
	1134	6.2	189		1026	5.8	177
	1732	3.1	96		1612	3.3	102
	2331	6.4	195		2220	6.2	190
2 Sa	0559	2.4	72	17 Su	0448	2.5	76
	1223	6.5	197		1115	6.3	191
	1838	2.9	89		1725	2.9	89
					2329	6.0	184
3 Su	0033	6.1	185	18 M	0537	2.6	79
	0644	2.6	80		1205	6.8	207
	1306	6.7	205		1834	2.4	73
	1936	2.7	81				
4 M	0131	5.8	178	19 Tu	0038	5.9	180
	0724	2.9	87		0627	2.7	82
	1346	6.9	211		1255	7.3	223
	2027	2.4	73		1938	1.8	56
5 Tu	0224	5.7	173	20 W	0144	5.9	179
	0802	3.1	93		0718	2.7	83
	1423	7.1	217		1345	7.8	239
	2112	2.2	66		2037	1.3	40
6 W	0313	5.5	169	21 Th	0246	5.9	179
	0839	3.2	98		0810	2.8	84
	1500	7.3	221		1437	8.2	251
	2154	2.0	60		2134	0.9	27
7 Th	0358	5.4	166	22 F	0344	5.9	179
	0914	3.3	101		0903	2.8	84
	1536	7.3	224		1529	8.5	260
	2234	1.9	57		2228	0.7	20
8 F	0440	5.3	163	23 Sa	0438	5.9	179
	0948	3.4	104		0955	2.7	83
	1612	7.4	225		1621	8.6	263
	2313	1.8	56		2321	0.6	18
9 Sa	0521	5.3	161	24 Su	0532	5.9	179
	1022	3.5	107		1048	2.7	83
	1648	7.4	225		1714	8.5	260
	2352	1.8	56				
10 Su	0601	5.2	158	25 M	0013	0.7	22
	1055	3.6	109		0624	5.8	178
	1725	7.3	224		1143	2.8	85
					1807	8.3	252
11 M	0031	1.9	58	26 Tu	0104	1.0	29
	0642	5.1	156		0717	5.9	179
	1130	3.6	111		1240	2.9	88
	1803	7.3	221		1900	7.8	239
12 Tu	0111	2.0	60	27 W	0155	1.3	39
	0723	5.1	155		0809	5.9	180
	1209	3.7	112		1340	3.0	91
	1843	7.1	217		1956	7.3	223
13 W	0152	2.1	63	28 Th	0245	1.7	51
	0806	5.1	156		0903	6.0	182
	1254	3.7	113		1445	3.1	94
	1927	7.0	212		2054	6.8	206
14 Th	0233	2.1	65	29 F	0334	2.1	63
	0852	5.2	159		0956	6.1	186
	1351	3.7	112		1554	3.1	95
	2017	6.8	206		2155	6.2	189
15 F	0316	2.3	69	30 Sa	0422	2.4	74
	0938	5.5	167		1047	6.3	191
	1458	3.6	109		1705	3.0	92
	2115	6.5	198		2259	5.7	175

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CABO de HORNOS, CHILE, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0509	2.8	85	16	0404	2.7	82
Su	1137	6.4	196	M	1036	6.6	202
	1813	2.8	86		1713	2.5	75
					2316	5.5	168
2	0005	5.4	166	17	0459	2.9	88
M	0555	3.1	93	Tu	1133	7.0	214
	1223	6.6	202		1825	2.0	62
	1913	2.6	78				
3	0108	5.2	160	18	0030	5.4	165
Tu	0640	3.2	99	W	0557	3.0	90
	1307	6.8	208		1230	7.4	227
	2006	2.3	70		1931	1.6	48
4	0205	5.2	158	19	0138	5.4	165
W	0723	3.3	102	Th	0657	3.0	90
	1349	7.0	214		1328	7.8	239
	2052	2.1	63		2031	1.1	35
5	0254	5.2	158	20	0239	5.5	168
Th	0804	3.4	103	F	0755	2.9	87
	1429	7.2	219		1424	8.2	249
	2133	1.9	57		2126	0.9	26
6	0338	5.2	158	21	0334	5.6	172
F	0843	3.4	103	Sa	0851	2.7	83
	1509	7.3	223		1518	8.4	255
	2213	1.7	53		2217	0.7	22
7	0418	5.2	158	22	0425	5.8	176
Sa	0921	3.3	102	Su	0945	2.6	78
	1547	7.4	226		1610	8.4	256
	2250	1.7	51		2306	0.7	22
8	0456	5.2	159	23	0513	5.9	180
Su	0958	3.3	101	M	1038	2.5	76
	1625	7.5	228		1701	8.2	251
	2327	1.6	50		2352	0.9	27
9	0533	5.2	159	24	0600	6.0	183
M	1035	3.3	100	Tu	1131	2.5	75
	1703	7.4	227		1751	7.9	241
10	0003	1.7	51	25	0036	1.2	36
Tu	0610	5.3	161	W	0645	6.1	186
	1114	3.2	99		1225	2.5	77
	1741	7.4	225		1840	7.4	226
11	0039	1.7	53	26	0119	1.5	47
W	0648	5.3	163	Th	0731	6.2	188
	1156	3.2	98		1320	2.6	80
	1822	7.2	219		1930	6.9	209
12	0115	1.9	57	27	0201	2.0	60
Th	0727	5.5	167	F	0817	6.2	189
	1244	3.2	98		1418	2.8	84
	1906	6.9	211		2023	6.3	191
13	0152	2.0	62	28	0243	2.4	73
F	0808	5.6	172	Sa	0903	6.2	190
	1340	3.1	96		1520	2.8	86
	1956	6.6	200		2120	5.7	174
14	0232	2.2	68	29	0325	2.8	86
Sa	0853	5.9	180	Su	0951	6.3	191
	1445	3.1	93		1627	2.8	86
	2054	6.2	188		2224	5.2	160
15	0316	2.5	75	30	0410	3.1	96
Su	0943	6.2	190	M	1041	6.3	193
	1558	2.8	86		1735	2.7	83
	2202	5.8	177		2332	5.0	151
				31	0459	3.4	104
				Tu	1132	6.4	196
					1839	2.5	77

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0040	4.9	148	16	0025	5.1	156
W	0550	3.5	108	Th	0537	3.2	97
	1223	6.6	201		1212	7.4	226
	1936	2.3	71		1922	1.4	44
2	0140	4.9	148	17	0132	5.2	159
Th	0642	3.6	109	F	0645	3.1	94
	1312	6.8	206		1315	7.7	234
	2024	2.1	64		2021	1.2	36
3	0230	4.9	150	18	0231	5.4	166
F	0730	3.5	106	Sa	0748	2.9	87
	1358	7.0	213		1414	7.9	240
	2107	1.9	58		2114	1.0	31
4	0311	5.0	153	19	0322	5.7	173
Sa	0815	3.3	102	Su	0846	2.6	80
	1442	7.2	219		1509	7.9	242
	2145	1.7	53		2201	1.0	30
5	0349	5.2	157	20	0408	5.9	181
Su	0858	3.2	98	M	0941	2.4	73
	1523	7.3	224		1600	7.9	240
	2222	1.6	49		2245	1.0	32
6	0425	5.3	162	21	0451	6.1	187
M	0939	3.0	92	Tu	1032	2.2	68
	1603	7.4	226		1648	7.7	234
	2256	1.6	48		2325	1.2	38
7	0500	5.5	167	22	0532	6.3	192
Tu	1020	2.9	88	W	1122	2.2	66
	1643	7.4	226		1735	7.3	223
	2330	1.6	48				
8	0536	5.6	172	23	0004	1.6	48
W	1103	2.8	84	Th	0612	6.4	196
	1724	7.3	223		1211	2.2	66
					1822	6.9	209
9	0004	1.7	51	24	0041	1.9	59
Th	0612	5.8	178	F	0651	6.5	198
	1149	2.6	80		1300	2.2	68
	1807	7.1	215		1908	6.3	193
10	0039	1.8	56	25	0116	2.3	71
F	0649	6.1	185	Sa	0730	6.5	197
	1238	2.5	77		1351	2.4	72
	1853	6.7	205		1956	5.8	177
11	0115	2.1	63	26	0152	2.8	84
Sa	0730	6.3	192	Su	0911	6.4	196
	1334	2.4	74		1445	2.5	75
	1945	6.3	192		2049	5.3	163
12	0154	2.4	72	27	0228	3.1	95
Su	0815	6.5	199	M	0854	6.4	194
	1437	2.3	71		1544	2.6	78
	2045	5.8	178		2148	5.0	151
13	0238	2.7	81	28	0308	3.4	105
M	0906	6.7	205	Tu	0941	6.3	192
	1547	2.2	67		1647	2.6	79
	2154	5.4	166		2253	4.7	144
14	0329	2.9	89	29	0356	3.6	111
Tu	1004	7.0	212	W	1035	6.3	192
	1701	2.0	62		1752	2.5	77
	2309	5.2	158				
15	0430	3.1	95	30	0002	4.6	141
W	1107	7.2	219	Th	0453	3.7	114
	1814	1.7	53		1132	6.4	194
					1853	2.4	73
				31	0103	4.7	143
				F	0554	3.7	113
					1229	6.5	199
					1945	2.2	68

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0154	4.8	147	16	0214	5.6	171
Sa	0652	3.5	108	Su	0744	2.8	85
	1321	6.7	205		1403	7.3	224
	2029	2.0	62		2053	1.4	42
2	0235	5.0	153	17	0302	5.9	180
Su	0745	3.3	101	M	0843	2.5	76
	1410	6.9	211		1458	7.3	223
	2108	1.8	56		2137	1.4	43
3	0313	5.3	161	18	0345	6.2	189
M	0833	3.1	93	Tu	0937	2.2	68
	1456	7.1	217		1549	7.2	218
	2144	1.7	52		2217	1.6	48
4	0349	5.5	169	19	0425	6.5	197
Tu	0920	2.8	84	W	1026	2.0	62
	1540	7.2	219		1637	6.9	211
	2219	1.6	50		2254	1.8	55
5	0424	5.9	179	20	0502	6.7	203
W	1006	2.4	74	Th	1113	1.9	58
	1623	7.2	219		1722	6.6	201
	2254	1.7	51		2329	2.1	64
6	0500	6.2	189	21	0538	6.8	206
Th	1053	2.2	66	F	1159	1.9	57
	1708	7.1	215		1806	6.2	190
	2329	1.8	54				
7	0537	6.5	199	22	0002	2.4	74
F	1141	1.9	58	Sa	0614	6.8	206
	1756	6.8	207		1243	1.9	58
					1850	5.8	178
8	0004	2.0	61	23	0035	2.8	84
Sa	0616	6.8	207	Su	0649	6.7	205
	1233	1.7	53		1327	2.0	61
	1846	6.4	196		1936	5.5	167
9	0042	2.3	69	24	0106	3.1	94
Su	0658	7.0	214	M	0725	6.6	202
	1329	1.6	50		1414	2.1	65
	1940	6.0	183		2023	5.2	157
10	0124	2.6	78	25	0139	3.3	102
M	0746	7.2	218	Tu	0804	6.5	199
	1430	1.6	49		1505	2.3	69
	2041	5.6	171		2115	4.9	148
11	0211	2.9	87	26	0215	3.6	109
Tu	0839	7.2	220	W	0849	6.4	195
	1537	1.6	50		1600	2.4	73
	2149	5.3	161		2213	4.7	142
12	0307	3.1	94	27	0258	3.7	113
W	0940	7.2	220	Th	0940	6.3	193
	1648	1.6	50		1700	2.4	74
	2303	5.1	156		2315	4.6	140
13	0413	3.2	99	28	0355	3.8	115
Th	1047	7.2	220	F	1038	6.3	192
	1759	1.6	48		1758	2.4	73
14	0015	5.1	156	29	0014	4.7	143
F	0526	3.2	99	Sa	0503	3.7	114
	1156	7.3	222		1139	6.4	194
	1905	1.5	45		1852	2.3	70
15	0119	5.3	162	30	0105	4.9	148
Sa	0638	3.1	93	Su	0611	3.6	109
	1302	7.3	223		1237	6.5	197
	2003	1.4	42		1938	2.2	66

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0149	5.2	157	16 Tu	0234	6.2	190
	0712	3.2	99		0838	2.4	72
	1332	6.6	201		1445	6.6	200
	2020	2.0	62		2104	2.0	61
2 Tu	0229	5.5	169	17 W	0316	6.5	199
	0808	2.9	88		0931	2.1	63
	1425	6.7	205		1537	6.4	194
	2059	2.0	60		2143	2.2	67
3 W	0307	6.0	182	18 Th	0354	6.8	206
	0901	2.4	74		1019	1.9	57
	1515	6.8	206		1625	6.2	188
	2137	1.9	59		2219	2.4	74
4 Th	0345	6.4	196	19 F	0430	6.9	211
	0952	2.0	60		1103	1.7	52
	1605	6.7	205		1710	5.9	181
	2214	2.0	60		2253	2.7	81
5 F	0424	6.9	209	20 Sa	0505	7.0	213
	1042	1.6	48		1145	1.7	51
	1655	6.6	202		1754	5.7	174
	2253	2.1	64		2326	2.9	89
6 Sa	0505	7.3	221	21 Su	0540	7.0	213
	1133	1.2	38		1226	1.7	51
	1747	6.4	195		1836	5.5	167
	2333	2.3	69		2358	3.1	96
7 Su	0548	7.5	229	22 M	0614	6.9	211
	1227	1.0	32		1307	1.8	54
	1840	6.1	187		1919	5.2	160
8 M	0015	2.5	76	23 Tu	0030	3.3	102
	0634	7.7	234		0650	6.8	208
	1322	1.0	30		1349	1.9	57
	1937	5.8	177		2003	5.1	154
9 Tu	0102	2.7	83	24 W	0102	3.5	107
	0725	7.7	235		0728	6.7	205
	1422	1.0	32		1433	2.0	62
	2037	5.5	169		2048	4.9	149
10 W	0154	3.0	90	25 Th	0137	3.6	110
	0821	7.6	232		0809	6.6	201
	1525	1.2	37		1521	2.2	66
	2141	5.3	163		2137	4.8	145
11 Th	0254	3.1	95	26 F	0219	3.7	113
	0923	7.4	226		0856	6.5	198
	1631	1.3	41		1611	2.3	69
	2249	5.3	161		2229	4.8	145
12 F	0403	3.2	98	27 Sa	0314	3.7	114
	1030	7.2	220		0949	6.4	194
	1737	1.5	46		1701	2.3	70
	2355	5.4	164		2321	4.9	149
13 Sa	0518	3.1	96	28 Su	0421	3.7	112
	1139	7.0	214		1048	6.3	192
	1838	1.6	49		1751	2.3	71
14 Su	0055	5.6	171	29 M	0011	5.2	157
	0631	3.0	90		0532	3.5	106
	1246	6.9	210		1151	6.3	191
	1933	1.7	52		1838	2.3	70
15 M	0148	5.9	181	30 Tu	0057	5.5	168
	0738	2.7	82		0641	3.1	95
	1348	6.7	205		1252	6.2	190
	2021	1.8	56		1923	2.3	70
				31 W	0141	6.0	182
					0743	2.7	81
					1353	6.2	190
					2007	2.3	69

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0223	6.5	197	16 F	0321	7.0	212
	0841	2.1	64		1007	1.8	55
	1451	6.2	190		1612	5.5	169
	2051	2.3	70		2142	3.0	91
2 F	0307	7.0	213	17 Sa	0358	7.1	215
	0937	1.6	48		1050	1.7	51
	1548	6.2	190		1658	5.4	166
	2134	2.4	72		2218	3.1	96
3 Sa	0351	7.5	228	18 Su	0434	7.1	217
	1031	1.1	33		1131	1.6	49
	1643	6.2	188		1741	5.3	163
	2219	2.5	75		2253	3.3	100
4 Su	0437	7.8	239	19 M	0510	7.1	217
	1124	0.8	23		1210	1.6	49
	1738	6.0	184		1822	5.2	160
	2306	2.6	78		2327	3.4	104
5 M	0525	8.1	246	20 Tu	0546	7.1	216
	1219	0.6	18		1248	1.6	50
	1833	5.9	180		1902	5.1	156
	2354	2.7	81				
6 Tu	0616	8.2	249	21 W	0000	3.5	106
	1314	0.6	18		0622	7.0	214
	1930	5.7	175		1327	1.7	53
					1942	5.1	154
7 W	0046	2.8	84	22 Th	0035	3.5	108
	0710	8.1	246		0700	6.9	211
	1411	0.7	22		1407	1.9	57
	2027	5.6	172		2023	5.0	152
8 Th	0143	2.9	88	23 F	0112	3.6	110
	0807	7.8	239		0740	6.8	207
	1509	1.0	29		1447	2.0	60
	2126	5.6	170		2105	5.0	152
9 F	0246	3.0	91	24 Sa	0156	3.6	110
	0907	7.5	229		0823	6.6	202
	1608	1.2	38		1528	2.1	63
	2227	5.6	172		2148	5.1	155
10 Sa	0355	3.1	93	25 Su	0250	3.6	110
	1011	7.1	217		0912	6.5	197
	1706	1.5	47		1610	2.2	67
	2326	5.8	176		2233	5.3	161
11 Su	0507	3.0	91	26 M	0354	3.5	107
	1117	6.7	204		1008	6.2	190
	1801	1.8	55		1654	2.3	70
					2319	5.6	171
12 M	0022	6.0	184	27 Tu	0503	3.2	99
	0619	2.8	86		1111	6.0	184
	1224	6.4	194		1740	2.4	73
	1853	2.1	64				
13 Tu	0113	6.3	192	28 W	0006	6.0	183
	0727	2.6	78		0614	2.9	88
	1328	6.1	185		1218	5.9	180
	1940	2.3	71		1827	2.5	76
14 W	0159	6.6	200	29 Th	0054	6.5	198
	0827	2.3	69		0720	2.4	72
	1427	5.8	178		1325	5.8	177
	2023	2.6	78		1916	2.6	79
15 Th	0241	6.8	207	30 F	0142	7.0	214
	0920	2.0	61		0823	1.8	55
	1522	5.7	173		1430	5.8	176
	2104	2.8	85		2007	2.7	81

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0232	7.5	229	16 Su	0326	7.1	217
	0922	1.3	39		1032	1.7	53
	1532	5.8	176		1641	5.2	157
	2059	2.7	82		2143	3.4	105
2 Su	0323	7.9	242	17 M	0405	7.2	219
	1019	0.9	26		1112	1.7	51
	1631	5.8	176		1722	5.2	157
	2151	2.7	82		2222	3.5	106
3 M	0415	8.3	252	18 Tu	0444	7.2	220
	1114	0.6	17		1150	1.6	50
	1727	5.8	177		1802	5.2	157
	2244	2.7	82		2259	3.5	107
4 Tu	0508	8.4	257	19 W	0522	7.2	219
	1208	0.4	13		1227	1.7	51
	1822	5.8	177		1839	5.2	157
	2338	2.7	82		2336	3.5	107
5 W	0602	8.4	257	20 Th	0559	7.2	218
	1302	0.5	15		1303	1.7	53
	1916	5.8	178		1917	5.2	158
6 Th	0034	2.7	83	21 F	0015	3.5	107
	0657	8.2	251		0637	7.1	215
	1355	0.7	21		1338	1.8	55
	2010	5.9	179		1954	5.2	160
7 F	0133	2.8	84	22 Sa	0056	3.5	107
	0753	7.9	240		0717	6.9	210
	1447	1.0	30		1414	1.9	59
	2104	5.9	181		2031	5.4	164
8 Sa	0236	2.8	85	23 Su	0142	3.4	105
	0851	7.4	225		0759	6.7	203
	1539	1.3	41		1449	2.1	63
	2158	6.1	185		2110	5.6	170
9 Su	0342	2.8	86	24 M	0236	3.4	103
	0951	6.9	209		0847	6.4	196
	1630	1.7	53		1526	2.2	68
	2251	6.2	190		2151	5.8	178
10 M	0452	2.8	85	25 Tu	0338	3.2	98
	1054	6.3	193		0942	6.1	186
	1719	2.1	65		1607	2.4	73
	2343	6.4	196		2236	6.2	189
11 Tu	0601	2.7	82	26 W	0445	3.0	90
	1159	5.9	179		1046	5.8	178
	1807	2.5	76		1651	2.6	79
					2324	6.6	201
12 W	0032	6.6	202	27 Th	0554	2.6	78
	0708	2.5	76		1155	5.6	170
	1304	5.5	169		1741	2.8	84
	1853	2.8	86				
13 Th	0119	6.8	207	28 F	0016	7.0	214
	0808	2.3	69		0702	2.1	64
	1406	5.3	163		1305	5.5	167
	1938	3.1	94		1835	2.9	87
14 F	0203	6.9	211	29 Sa	0110	7.5	228
	0901	2.0	62		0807	1.6	49
	1504	5.2	159		1413	5.4	166
	2022	3.2	99		1932	2.9	89
15 Sa	0245	7.1	215	30 Su	0205	7.9	240
	0948	1.9	57		0908	1.2	36
	1555	5.2	158		1517	5.5	168
	2103	3.4	103		2030	2.9	88
				31 M	0301	8.2	251
					1005	0.9	26
					1616	5.6	171
					2128	2.8	86

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTA ARENAS, CHILE, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0345	7.7	234	16 Tu	0416	7.0	212
	1011	2.8	85		1039	2.2	66
	1524	5.0	151		1612	5.6	171
	2131	1.1	34		2217	1.8	54
2 Tu	0418	7.5	229	17 W	0438	6.8	207
	1045	2.6	78		1103	2.0	62
	1606	5.2	158		1649	5.8	177
	2200	1.4	43		2242	2.2	67
3 W	0450	7.3	221	18 Th	0457	6.6	201
	1119	2.2	68		1123	1.9	57
	1651	5.4	164		1732	5.9	179
	2214	1.8	55		2320	2.8	84
4 Th	0516	6.9	209	19 F	0521	6.3	192
	1153	1.9	59		1155	1.8	54
	1743	5.5	169		1824	5.8	178
	2257	2.3	71				
5 F	0527	6.4	195	20 Sa	0008	3.4	103
	1225	1.7	51		0551	5.9	180
	1850	5.6	171		1237	1.7	52
	2358	3.0	91		1926	5.8	176
6 Sa	0543	5.9	179	21 Su	0107	4.1	124
	1300	1.5	46		0622	5.4	164
	2021	5.7	175		1325	1.8	54
					2038	5.8	176
7 Su	0202	3.6	110	22 M	0217	4.6	139
	0615	5.3	161		0653	4.8	147
	1345	1.4	43		1416	1.8	55
	2151	6.0	184		2219	6.0	182
8 M	0419	3.8	117	23 Tu	0654	4.3	132
	0654	4.7	144		0741	4.4	133
	1444	1.3	39		1507	1.9	57
	2300	6.5	197		2353	6.4	196
9 Tu	0536	3.7	114	24 W	0708	3.9	120
	0737	4.3	130		0838	4.1	124
	1653	1.1	34		1601	1.9	57
10 W	0000	6.8	208	25 Th	0034	6.9	209
	0636	3.5	108		0725	.6	110
	0827	4.0	121		0935	.0	121
	1759	0.9	27		1709	1.8	55
11 Th	0054	7.1	216	26 F	0111	7.3	221
	0726	3.3	102		0749	3.3	102
	0930	3.8	117		1249	4.2	128
	1853	0.8	22		1852	1.6	49
12 F	0143	7.3	221	27 Sa	0146	7.5	229
	0811	3.1	95		0816	3.1	96
	1318	4.0	122		1329	4.5	138
	1943	0.8	22		1939	1.4	43
13 Sa	0227	7.3	222	28 Su	0220	7.6	233
	0853	2.9	87		0846	3.0	92
	1408	4.4	135		1407	4.9	150
	2031	0.9	26		2020	1.3	40
14 Su	0308	7.2	220	29 M	0253	7.7	234
	0932	2.6	79		0916	2.8	86
	1454	4.9	149		1445	5.3	162
	2114	1.1	34		2100	1.4	42
15 M	0345	7.1	216	30 Tu	0325	7.5	230
	1008	2.4	72		0946	2.5	77
	1535	5.3	161		1524	5.7	175
	2151	1.4	43		2139	1.6	48
				31 W	0356	7.3	223
					1017	2.1	65
					1605	6.1	186
					2217	1.9	57

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0423	7.0	213	16 F	0416	6.5	199
	1047	1.7	53		1031	1.3	39
	1647	6.3	193		1658	6.6	200
	2254	2.3	70		2251	2.7	82
2 F	0438	6.6	202	17 Sa	0438	6.2	190
	1112	1.4	42		1102	1.2	36
	1733	6.4	195		1740	6.4	196
	2327	2.8	85		2332	3.2	98
3 Sa	0434	6.2	190	18 Su	0459	5.8	177
	1129	1.1	35		1140	1.2	38
	1829	6.3	191		1830	6.2	190
4 Su	0000	3.3	102	19 M	0023	3.8	115
	0458	5.8	177		0408	5.4	164
	1155	1.0	32		1223	1.5	46
	1953	6.0	184		1928	6.0	182
5 M	0136	4.0	121	20 Tu	0124	4.3	130
	0531	5.2	159		0414	5.0	153
	1240	1.1	35		1316	1.8	56
	2130	6.0	184		2040	5.8	177
6 Tu	0406	4.2	127	21 W	0240	4.6	139
	0607	4.6	140		0408	4.7	142
	1341	1.3	40		1415	2.1	64
	2247	6.2	189		2255	6.0	182
7 W	0531	3.9	120	22 Th	0646	3.9	119
	0648	4.0	123		0753	4.0	121
	1544	1.5	45		1516	2.3	69
	2354	6.5	196				
8 Th	0635	3.5	108	23 F	0002	6.5	197
	0752	3.6	111		0654	3.6	109
	1756	1.3	41		0901	3.9	120
					1632	2.3	69
9 F	0049	6.6	202	24 Sa	0042	6.9	211
	0718	3.2	97		0717	3.3	100
	1235	3.8	116		1239	4.5	137
	1853	1.2	38		1846	2.0	61
10 Sa	0134	6.7	205	25 Su	0119	7.2	220
	0755	2.9	87		0746	3.0	92
	1325	4.4	135		1319	5.1	155
	1942	1.1	35		1931	1.8	55
11 Su	0212	6.8	206	26 M	0154	7.3	223
	0829	2.5	77		0815	2.8	85
	1408	5.1	155		1356	5.7	173
	2027	1.2	36		2012	1.8	54
12 M	0247	6.8	206	27 Tu	0227	7.3	221
	0903	2.2	67		0845	2.5	75
	1447	5.7	173		1435	6.3	191
	2106	1.3	40		2052	1.9	57
13 Tu	0318	6.8	206	28 W	0258	7.1	215
	0934	2.0	60		0915	2.1	63
	1521	6.1	186		1514	6.8	206
	2139	1.5	47		2132	2.1	64
14 W	0342	6.7	205				
	0959	1.7	53				
	1551	6.4	195				
	2202	1.9	57				
15 Th	0359	6.7	203				
	1012	1.5	46				
	1622	6.5	199				
	2221	2.2	68				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0328	6.8	206	16 F	0320	6.2	188
	0945	1.6	50		0926	1.1	35
	1555	7.1	216		1557	7.1	215
	2211	2.4	74		2204	2.5	77
2 F	0352	6.5	197	17 Sa	0338	6.0	184
	1013	1.2	38		0946	0.9	28
	1636	7.2	219		1630	7.1	215
	2249	2.8	85		2231	2.8	85
3 Sa	0350	6.2	189	18 Su	0359	5.8	176
	1033	1.0	29		1015	0.9	27
	1720	7.0	214		1708	6.9	210
	2327	3.2	99		2309	3.1	95
4 Su	0350	6.0	182	19 M	0316	5.4	166
	1044	0.8	25		1047	1.0	32
	1814	6.7	203		1750	6.6	201
					2354	3.5	107
5 M	0009	3.7	114	20 Tu	0331	5.2	158
	0422	5.6	170		1120	1.4	42
	1115	0.9	28		1841	6.2	190
	1938	6.2	190				
6 Tu	0158	4.2	129	21 W	0051	3.9	118
	0456	5.0	152		0355	4.8	147
	1200	1.2	38		1210	1.8	56
	2114	6.0	184		1944	5.9	181
7 W	0400	4.2	127	22 Th	0201	4.2	127
	0531	4.3	132		0408	4.4	135
	1301	1.8	54		1325	2.3	69
	2232	6.1	185		2117	5.8	178
8 Th	0613	3.7	113	23 F	0551	3.9	118
	0924	3.3	100		0727	4.0	122
	1645	2.0	62		1434	2.6	79
	2343	6.2	190		2310	6.1	187
9 F	0623	3.2	99	24 Sa	0608	3.4	105
	1148	3.9	118		1127	4.2	128
	1754	1.9	57		1721	2.8	85
10 Sa	0036	6.3	191	25 Su	0002	6.5	198
	0656	2.9	87		0637	3.1	94
	1241	4.6	141		1217	5.0	152
	1849	1.7	52		1828	2.5	77
11 Su	0116	6.3	192	26 M	0043	6.7	203
	0728	2.5	76		0708	2.8	84
	1322	5.4	164		1259	5.8	177
	1934	1.6	48		1914	2.4	73
12 M	0150	6.3	193	27 Tu	0120	6.6	202
	0800	2.2	67		0738	2.4	74
	1358	6.0	183		1338	6.6	200
	2014	1.6	48		1957	2.4	73
13 Tu	0221	6.3	193	28 W	0154	6.5	197
	0831	1.9	57		0809	2.0	62
	1431	6.5	198		1418	7.2	219
	2050	1.7	52		2038	2.5	77
14 W	0247	6.3	193	29 Th	0226	6.2	190
	0859	1.6	50		0840	1.6	49
	1501	6.8	207		1458	7.6	232
	2121	1.9	59		2118	2.7	83
15 Th	0306	6.3	191	30 F	0256	6.0	184
	0918	1.4	43		0911	1.2	36
	1529	7.0	213		1540	7.8	237
	2145	2.2	68		2158	3.0	91
				31 Sa	0315	5.9	179
					0938	0.9	26
					1623	7.7	234
					2239	3.3	100

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0241	5.8	177	16 M	0331	5.2	158
	0956	0.7	21		0938	0.8	24
	1709	7.4	225		1645	7.2	219
	2322	3.6	110		2257	3.1	93
2 M	0316	5.6	172	17 Tu	0238	5.1	154
	1013	0.7	22		1010	1.0	29
	1703	6.9	211		1726	6.9	210
					2341	3.2	99
3 Tu	0021	3.9	119	18 W	0311	4.9	148
	0356	5.2	160		1041	1.3	40
	1049	1.0	32		1813	6.5	199
	1925	6.5	197				
4 W	0206	4.0	122	19 Th	0034	3.5	106
	0439	4.7	142		0354	4.6	139
	1136	1.7	51		1125	1.8	55
	2048	6.2	188		1910	6.2	189
5 Th	0335	3.8	115	20 F	0141	3.6	111
	0531	4.0	123		0553	4.2	128
	1418	2.4	74		1237	2.4	72
	2202	5.9	181		2021	6.0	182
6 F	0448	3.3	101	21 Sa	0354	3.6	109
	1029	4.1	124		0723	4.1	125
	1633	2.6	78		1356	2.9	88
	2311	5.9	181		2201	5.9	180
7 Sa	0542	2.9	88	22 Su	0509	3.1	96
	1139	4.9	148		1054	4.7	142
	1743	2.4	73		1653	3.2	98
					2311	5.9	180
8 Su	0005	5.9	181	23 M	0549	2.7	83
	0620	2.5	76		1149	5.5	169
	1227	5.6	171		1805	3.1	94
	1836	2.2	68				
9 M	0046	5.9	181	24 Tu	0000	5.8	178
	0654	2.2	66		0625	2.4	72
	1305	6.3	191		1234	6.4	196
	1919	2.2	66		1855	3.0	91
10 Tu	0119	5.9	180	25 W	0041	5.7	173
	0726	1.8	56		0658	2.0	60
	1339	6.8	206		1316	7.2	218
	1956	2.2	67		1940	3.0	91
11 W	0147	5.8	178	26 Th	0117	5.5	167
	0756	1.5	47		0731	1.6	48
	1411	7.1	217		1358	7.7	234
	2031	2.3	71		2023	3.1	94
12 Th	0210	5.8	176	27 F	0151	5.3	162
	0821	1.3	40		0805	1.1	35
	1441	7.3	223		1442	7.9	242
	2103	2.5	76		2105	3.2	99
13 F	0226	5.7	173	28 Sa	0220	5.2	160
	0833	1.1	34		0838	0.8	24
	1508	7.4	226		1526	7.9	242
	2130	2.7	81		2148	3.5	104
14 Sa	0243	5.5	169	29 Su	0108	5.3	161
	0843	0.9	27		0907	0.6	19
	1536	7.4	226		1612	7.8	238
	2154	2.8	85		2234	3.5	108
15 Su	0306	5.4	164	30 M	0201	5.3	162
	0908	0.8	23		0926	0.7	20
	1608	7.3	224		1701	7.5	229
	2221	2.9	88		2325	3.6	110

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0253	5.2	157	16 W	0355	4.8	145
	0953	1.0	29		0954	0.9	28
	1756	7.1	216		1710	7.1	217
					2334	2.9	87
2 W	0031	3.6	109	17 Th	0429	4.7	142
	0347	4.8	147		1029	1.2	38
	1034	1.5	46		1753	6.9	209
	1902	6.6	202				
3 Th	0145	3.4	105	18 F	0023	2.9	89
	0455	4.4	135		0513	4.5	138
	1132	2.3	69		1109	1.8	54
	2011	6.2	190		1839	6.5	198
4 F	0252	3.2	97	19 Sa	0119	2.9	88
	0842	4.3	132		0621	4.5	136
	1439	2.9	88		1205	2.4	73
	2116	5.9	180		1927	6.1	186
5 Sa	0354	2.9	88	20 Su	0225	2.8	85
	1003	4.9	149		0821	4.6	140
	1604	3.1	93		1325	3.1	93
	2220	5.6	172		2020	5.7	173
6 Su	0450	2.6	78	21 M	0344	2.5	77
	1111	5.6	170		1013	5.2	159
	1719	3.0	92		1616	3.5	106
	2317	5.5	168		2057	5.2	160
7 M	0535	2.2	68	22 Tu	0447	2.2	67
	1202	6.2	190		1116	6.0	184
	1816	3.0	90		1739	3.4	104
					2152	4.9	150
8 Tu	0001	5.4	164	23 W	0533	1.8	55
	0613	1.9	58		1207	6.8	206
	1242	6.8	206		1835	3.3	102
	1900	2.9	89		2118	4.7	144
9 W	0035	5.3	162	24 Th	0614	1.4	43
	0645	1.6	48		1254	7.3	224
	1317	7.2	218		1923	3.3	102
	1937	2.9	89		2200	4.7	142
10 Th	0102	5.2	159	25 F	0654	1.0	32
	0714	1.3	39		1341	7.7	235
	1349	7.4	226		2010	3.4	103
	2013	2.9	88		2247	4.7	142
11 F	0124	5.1	156	26 Sa	0734	0.7	22
	0735	1.1	33		1428	7.9	240
	1420	7.6	231		2057	3.4	105
	2047	2.9	88		2341	4.7	143
12 Sa	0145	5.0	153	27 Su	0815	0.6	17
	0747	0.9	27		1516	7.8	239
	1448	7.6	233		2144	3.4	104
	2118	2.9	88				
13 Su	0213	4.9	150	28 M	0040	4.7	144
	0810	0.8	24		0853	0.6	19
	1519	7.6	232		1604	7.7	235
	2147	2.9	87		2233	3.3	100
14 M	0245	4.9	149	29 Tu	0143	4.7	144
	0842	0.7	22		0926	0.9	27
	1552	7.5	229		1651	7.4	227
	2217	2.9	87		2323	3.1	95
15 Tu	0320	4.8	147	30 W	0303	4.7	143
	0918	0.8	23		0958	1.3	41
	1629	7.4	225		1739	7.1	216
	2252	2.9	87				
				31 Th	0015	2.9	88
					0450	4.7	143
					1048	1.9	59
					1828	6.7	203

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0107	2.7	83	16 Sa	0528	5.0	151
	0645	4.8	145		1055	1.8	55
	1224	2.6	79		1759	6.6	201
	1918	6.2	189				
2 Sa	0159	2.6	78	17 Su	0042	2.0	61
	0807	5.0	153		0633	5.1	154
	1356	3.1	95		1144	2.4	74
	2009	5.8	176		1815	6.1	186
3 Su	0251	2.4	73	18 M	0127	1.8	56
	0919	5.4	164		0759	5.2	160
	1512	3.5	106		1304	3.1	95
	2057	5.3	163		1832	5.6	171
4 M	0341	2.2	68	19 Tu	0213	1.6	50
	1033	5.9	179		0932	5.7	173
	1640	3.7	113		1538	3.6	109
	2140	5.0	153		1907	5.1	155
5 Tu	0429	2.0	60	20 W	0257	1.4	44
	1134	6.4	194		1042	6.2	190
	1759	3.7	112		1712	3.6	110
	2219	4.8	145		1949	4.7	142
6 W	0511	1.7	51	21 Th	0342	1.2	36
	1219	6.8	208		1141	6.8	206
	1848	3.6	109		1815	3.5	107
	2300	4.6	140		2035	4.4	133
7 Th	0547	1.4	43	22 F	0514	0.9	28
	1255	7.2	219		1236	7.2	218
	1926	3.4	104		1911	3.4	105
	2351	4.5	137		2126	4.2	128
8 F	0617	1.2	36	23 Sa	0622	0.7	20
	1329	7.4	226		1328	7.4	226
	2001	3.2	98		2001	3.3	102
					2223	4.1	126
9 Sa	0037	4.5	136	24 Su	0718	0.5	16
	0645	1.0	31		1418	7.5	230
	1401	7.5	230		2049	3.2	97
	2034	3.0	92		2325	4.2	127
10 Su	0117	4.5	136	25 M	0811	0.6	17
	0717	0.9	27		1505	7.5	229
	1433	7.6	232		2135	2.9	89
	2106	2.9	88				
11 M	0156	4.5	138	26 Tu	0237	4.3	132
	0754	0.8	25		0901	0.8	23
	1506	7.6	231		1550	7.4	226
	2137	2.8	85		2218	2.6	80
12 Tu	0234	4.6	140	27 W	0332	4.7	142
	0833	0.8	24		0950	1.1	34
	1540	7.5	230		1631	7.2	220
	2208	2.7	82		2300	2.3	71
13 W	0313	4.7	143	28 Th	0426	5.0	151
	0912	0.8	25		1035	1.5	46
	1615	7.4	227		1709	6.9	211
	2242	2.6	78		2340	2.1	65
14 Th	0353	4.8	147	29 F	0518	5.2	159
	0948	1.0	30		1118	2.0	62
	1651	7.3	221		1741	6.6	201
	2319	2.4	73				
15 F	0437	4.9	149	30 Sa	0017	2.0	60
	1020	1.3	40		0612	5.4	165
	1727	7.0	213		1200	2.6	78
	2359	2.2	67		1806	6.2	190

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTA ARENAS, CHILE, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0052	1.9	57	16 M	0620	5.7	174
	0710	5.5	168		1137	2.6	80
	1250	3.1	95		1712	5.9	181
	1829	5.8	178				
2 M	0125	1.8	54	17 Tu	0024	1.0	31
	0814	5.6	172		0733	5.7	175
	1347	3.7	113		1258	3.2	99
	1902	5.4	164		1742	5.4	165
3 Tu	0203	1.7	51	18 W	0057	0.9	27
	0930	5.8	178		0901	5.9	179
	1500	4.2	127		1514	3.7	113
	1939	4.9	150		1820	4.9	148
4 W	0245	1.5	47	19 Th	0146	0.8	25
	1100	6.2	188		1018	6.2	188
	1801	4.1	126		1653	3.7	114
	2019	4.5	138		1904	4.3	132
5 Th	0329	1.4	44	20 F	0244	0.8	23
	1156	6.6	200		1125	6.5	197
	1847	3.8	116		1805	3.6	109
	2102	4.2	129		1957	3.9	120
6 F	0416	1.3	41	21 Sa	0342	0.7	22
	1235	6.9	210		1226	6.8	206
	1920	3.5	106		1904	3.3	101
	2149	4.0	123		2104	3.7	113
7 Sa	0507	1.3	39	22 Su	0619	0.7	21
	1311	7.2	218		1320	6.9	211
	1949	3.2	97		1952	3.0	92
					2215	3.7	113
8 Su	0027	4.0	122	23 M	0719	0.7	20
	0622	1.2	36		1407	7.0	214
	1345	7.3	224		2034	2.7	82
	2019	3.0	90				
9 M	0118	4.2	128	24 Tu	0150	4.1	125
	0722	1.1	33		0813	0.7	22
	1419	7.4	227		1449	7.0	213
	2050	2.8	84		2113	2.3	71
10 Tu	0156	4.4	134	25 W	0242	4.7	143
	0803	1.0	30		0901	0.9	27
	1453	7.5	228		1527	7.0	212
	2121	2.6	80		2150	2.0	61
11 W	0233	4.7	142	26 Th	0329	5.2	159
	0842	1.0	29		0945	1.2	36
	1525	7.4	227		1601	6.8	208
	2151	2.4	74		2225	1.7	52
12 Th	0311	4.9	150	27 F	0411	5.6	171
	0918	1.0	32		1022	1.5	46
	1557	7.3	224		1630	6.7	204
	2222	2.2	66		2256	1.5	45
13 F	0351	5.2	158	28 Sa	0449	5.9	179
	0955	1.2	38		1052	1.9	59
	1627	7.1	217		1651	6.5	198
	2254	1.8	56		2319	1.3	40
14 Sa	0435	5.4	165	29 Su	0528	6.0	182
	1029	1.6	49		1119	2.4	74
	1654	6.8	207		1708	6.2	190
	2326	1.5	46		2341	1.1	35
15 Su	0523	5.6	171	30 M	0612	6.0	182
	1100	2.1	63		1156	3.0	91
	1706	6.4	195		1733	5.8	178
	2357	1.2	37				
				31 Tu	0015	1.1	33
					0703	5.9	179
					1245	3.6	110
					1806	5.3	163

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0058	1.1	35	16 Th	0004	0.6	17
	0804	5.8	176		0844	5.9	179
	1344	4.1	126		1510	3.8	117
	1843	4.8	146		1740	4.6	139
2 Th	0146	1.3	39	17 F	0102	0.8	23
	0931	5.8	177		1004	6.0	182
	1807	4.2	127		1647	3.7	113
	1926	4.3	130		1823	3.9	120
3 F	0237	1.4	44	18 Sa	0214	1.0	30
	1129	6.1	186		1117	6.1	187
	1841	3.7	114		1804	3.3	102
	2018	3.9	119		1933	3.4	105
4 Sa	0330	1.6	48	19 Su	0518	1.1	34
	1212	6.5	197		1221	6.3	193
	1903	3.4	103		1856	2.9	89
	2118	3.7	114				
5 Su	0431	1.6	49	20 M	0009	3.4	104
	1248	6.8	207		0626	1.0	31
	1927	3.1	93		1311	6.5	197
					1935	2.6	78
6 M	0033	4.0	121	21 Tu	0107	4.1	124
	0637	1.5	45		0721	1.0	29
	1324	7.1	216		1352	6.5	197
	1955	2.8	85		2010	2.2	67
7 Tu	0115	4.4	134	22 W	0152	4.8	146
	0723	1.3	39		0808	1.0	29
	1358	7.3	222		1428	6.5	197
	2025	2.6	78		2044	1.8	56
8 W	0152	4.8	146	23 Th	0233	5.4	166
	0803	1.2	37		0850	1.1	33
	1432	7.3	223		1500	6.5	197
	2055	2.4	72		2117	1.5	46
9 Th	0229	5.2	158	24 F	0310	5.9	181
	0841	1.2	38		0928	1.3	40
	1503	7.2	220		1528	6.4	195
	2124	2.1	64		2147	1.2	38
10 F	0306	5.5	169	25 Sa	0345	6.3	191
	0918	1.4	44		1000	1.6	50
	1533	7.0	213		1550	6.3	193
	2153	1.7	53		2210	1.0	31
11 Sa	0345	5.9	180	26 Su	0417	6.4	195
	0956	1.7	52		1024	2.0	62
	1559	6.7	204		1605	6.2	188
	2222	1.3	40		2223	0.8	25
12 Su	0427	6.2	188	27 M	0450	6.4	196
	1033	2.1	63		1045	2.5	75
	1616	6.3	193		1623	5.9	181
	2249	1.0	29		2246	0.7	21
13 M	0512	6.3	191	28 Tu	0527	6.3	193
	1112	2.5	76		1118	2.9	89
	1603	6.0	184		1648	5.6	170
	2309	0.7	21		2321	0.7	22
14 Tu	0604	6.2	188	29 W	0611	6.1	187
	1153	3.0	91		1203	3.4	103
	1626	5.7	173		1715	5.1	155
	2325	0.5	16				
15 W	0713	6.0	183	30 Th	0003	1.0	30
	1303	3.5	107		0702	5.8	178
	1701	5.2	157		1258	3.8	117
					1556	4.6	141
				31 F	0054	1.3	41
					0807	5.6	171
					1405	4.2	127
					1549	4.5	132

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0152	1.7	52	16 Su	0401	1.6	49
	1012	5.6	170		1104	5.9	181
	1815	3.6	111		1748	2.9	89
	1948	3.8	115		2314	3.6	110
2 Su	0253	2.0	60	17 M	0523	1.6	48
	1135	6.0	183		1206	6.0	184
	1829	3.3	100		1831	2.5	75
	2223	3.7	113				
3 M	0406	2.1	63	18 Tu	0017	4.4	133
	1216	6.5	197		0626	1.4	43
	1853	2.9	89		1252	6.0	184
					1907	2.1	64
4 Tu	0017	4.3	132	19 W	0102	5.2	157
	0626	1.8	56		0715	1.3	40
	1253	6.8	207		1329	6.0	184
	1922	2.6	79		1940	1.8	54
5 W	0059	5.0	151	20 Th	0140	5.8	177
	0710	1.7	51		0756	1.3	40
	1329	6.9	211		1401	6.0	183
	1952	2.3	71		2012	1.5	45
6 Th	0137	5.5	168	21 F	0215	6.3	193
	0751	1.7	51		0833	1.4	44
	1403	6.9	210		1430	6.0	182
	2022	2.1	63		2042	1.2	36
7 F	0215	6.0	184	22 Sa	0248	6.7	203
	0830	1.8	54		0908	1.7	51
	1434	6.7	203		1453	5.9	180
	2051	1.7	53		2108	1.0	29
8 Sa	0253	6.5	198	23 Su	0319	6.8	208
	0908	2.0	61		0938	2.0	60
	1503	6.4	194		1510	5.8	177
	2119	1.3	41		2122	0.8	24
9 Su	0332	6.8	207	24 M	0348	6.9	209
	0947	2.3	69		1002	2.3	70
	1526	6.1	185		1525	5.6	172
	2146	1.0	29		2133	0.6	19
10 M	0413	6.9	211	25 Tu	0418	6.8	208
	1025	2.6	79		1023	2.6	78
	1503	5.8	178		1545	5.4	166
	2208	0.6	19		2200	0.6	17
11 Tu	0457	6.8	208	26 W	0452	6.7	203
	1106	3.0	90		1054	2.8	86
	1515	5.7	174		1611	5.1	156
	2220	0.4	13		2234	0.7	22
12 W	0549	6.5	199	27 Th	0531	6.4	195
	1153	3.3	102		1135	3.1	96
	1551	5.4	164		1608	4.8	145
	2247	0.4	13		2315	1.0	32
13 Th	0700	6.2	188	28 F	0619	6.0	184
	1314	3.7	113		1227	3.5	106
	1630	4.9	148		1537	4.5	136
	2331	0.7	22				
14 F	0830	5.9	181	29 Sa	0007	1.6	48
	1507	3.8	115		0718	5.7	173
	1712	4.2	128		1332	3.7	114
					1548	4.1	125
15 Sa	0034	1.2	37	30 Su	0112	2.1	63
	0949	5.9	179		0839	5.5	168
	1637	3.4	104		1723	3.6	109
	1808	3.5	108		1939	3.8	116

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0223	2.5	75	16	0515	2.1	65
M	1038	5.7	174	Tu	1135	5.7	173
	1741	3.1	96		1755	2.2	66
	2302	4.1	126				
2	0459	2.7	81	17	0003	5.5	167
Tu	1133	6.1	185	W	0616	2.0	60
	1811	2.7	83		1222	5.6	172
	2355	4.9	150		1832	1.8	55
3	0606	2.4	74	18	0045	6.2	188
W	1216	6.3	191	Th	0701	1.9	57
	1842	2.4	72		1258	5.6	170
					1906	1.5	46
4	0037	5.7	173	19	0121	6.7	204
Th	0653	2.3	70	F	0740	1.9	59
	1254	6.3	191		1329	5.5	167
	1914	2.1	63		1936	1.2	37
5	0117	6.4	194	20	0155	7.0	214
F	0735	2.3	71	Sa	0815	2.0	62
	1330	6.1	185		1354	5.4	165
	1945	1.8	54		2004	1.0	29
6	0156	6.9	211	21	0226	7.2	220
Sa	0816	2.4	74	Su	0848	2.2	67
	1402	5.8	177		1415	5.3	162
	2014	1.4	43		2024	0.8	24
7	0235	7.3	223	22	0256	7.3	223
Su	0856	2.6	80	M	0920	2.3	71
	1430	5.6	170		1432	5.2	159
	2041	1.0	32		2033	0.7	20
8	0316	7.5	228	23	0324	7.3	222
M	0935	2.9	88	Tu	0947	2.5	76
	1445	5.4	165		1452	5.1	156
	2107	0.7	20		2052	0.6	17
9	0359	7.4	226	24	0353	7.2	219
Tu	1016	3.1	95	W	1011	2.6	79
	1357	5.5	167		1520	5.0	152
	2126	0.5	14		2123	0.6	19
10	0445	7.2	219	25	0426	7.0	213
W	1100	3.3	101	Th	1040	2.7	83
	1440	5.4	164		1552	4.8	147
	2145	0.5	14		2200	0.8	25
11	0538	6.8	208	26	0504	6.7	204
Th	1158	3.5	107	F	1118	2.9	88
	1525	5.1	154		1628	4.6	140
	2221	0.7	22		2240	1.2	37
12	0648	6.4	195	27	0548	6.4	194
F	1322	3.6	109	Sa	1208	3.1	94
	1613	4.6	139		1711	4.3	132
	2310	1.3	40		2328	1.7	53
13	0808	6.1	185	28	0641	6.0	183
Sa	1448	3.4	103	Su	1310	3.2	99
	1714	3.9	120		1814	4.1	125
14	0126	2.1	62	29	0032	2.4	72
Su	0922	5.8	178	M	0748	5.7	174
	1603	3.0	91		1438	3.2	99
	2149	3.9	120		2003	4.1	124
15	0357	2.2	68	30	0153	2.9	88
M	1033	5.7	175	Tu	0919	5.6	170
	1708	2.6	78		1633	2.9	88
	2307	4.7	143		2229	4.7	142
				31	0425	3.2	97
				W	1038	5.6	171
					1719	2.5	76
					2326	5.5	168

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0542	3.1	93	16	0025	6.7	205
Th	1131	5.5	168	F	0647	2.7	83
	1757	2.1	65		1220	5.0	152
					1829	1.3	41
2	0012	6.3	193	17	0102	7.1	217
F	0633	3.0	90	Sa	0725	2.7	83
	1215	5.3	163		1250	4.9	149
	1833	1.8	55		1859	1.1	33
3	0054	7.0	214	18	0135	7.4	225
Sa	0720	2.9	89	Su	0800	2.7	82
	1253	5.2	157		1315	4.8	147
	1906	1.5	45		1924	0.9	26
4	0137	7.5	229	19	0206	7.5	230
Su	0803	3.0	92	M	0833	2.7	81
	1327	5.0	151		1338	4.8	146
	1937	1.1	33		1942	0.8	23
5	0219	7.8	237	20	0235	7.6	231
M	0846	3.1	96	Tu	0905	2.6	80
	1149	4.9	149		1403	4.8	145
	2007	0.7	22		1959	0.7	21
6	0304	7.8	239	21	0305	7.5	229
Tu	0929	3.3	101	W	0934	2.6	79
	1236	5.0	153		1431	4.8	145
	2036	0.6	17		2026	0.7	20
7	0350	7.7	235	22	0335	7.4	226
W	1015	3.4	103	Th	1002	2.6	79
	1326	5.1	154		1504	4.8	146
	2100	0.6	17		2101	0.7	22
8	0438	7.4	227	23	0408	7.3	221
Th	1105	3.4	103	F	1031	2.6	79
	1419	5.0	151		1541	4.8	146
	2129	0.8	25		2138	0.9	28
9	0530	7.1	216	24	0444	7.0	214
F	1203	3.3	100	Sa	1107	2.6	80
	1515	4.7	144		1620	4.8	145
	2210	1.3	41		2215	1.3	39
10	0630	6.7	203	25	0523	6.8	206
Sa	1308	3.1	95	Su	1150	2.7	81
	1631	4.3	132		1707	4.6	141
	2312	2.1	63		2254	1.8	54
11	0735	6.2	190	26	0606	6.4	196
Su	1414	2.9	88	M	1243	2.7	81
	2006	4.4	133		1811	4.5	138
					2340	2.5	75
12	0209	2.6	80	27	0652	6.0	183
M	0841	5.8	177	Tu	1345	2.6	79
	1517	2.6	80		1950	4.6	141
	2130	4.9	148				
13	0334	2.9	88	28	0107	3.1	96
Tu	0947	5.5	167	W	0741	5.6	170
	1619	2.3	71		1457	2.4	74
	2245	5.5	168		2142	5.2	157
14	0456	2.9	88	29	0334	3.6	110
W	1051	5.3	161	Th	0824	5.1	156
	1712	2.0	61		1608	2.1	65
	2341	6.2	189		2250	5.9	180
15	0601	2.8	85	30	0511	3.6	109
Th	1142	5.1	156	F	0923	4.8	146
	1754	1.7	51		1702	1.8	55
					2343	6.7	203

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0612	3.4	105	16	0046	7.2	219
Sa	0850	4.6	139	Su	0718	3.3	101
	1748	1.4	44		1210	4.3	132
					1824	1.2	37
2	0033	7.3	221	17	0119	7.4	225
Su	0704	3.4	103	M	0751	3.1	95
	0937	4.5	136		1247	4.4	133
	1829	1.1	33		1856	1.0	32
3	0121	7.6	233	18	0150	7.5	229
M	0753	3.4	103	Tu	0822	2.9	89
	1027	4.5	136		1322	4.5	136
	1909	0.8	24		1927	1.0	29
4	0208	7.9	240	19	0222	7.6	231
Tu	0840	3.4	103	W	0852	2.8	84
	1120	4.5	138		1353	4.6	140
	1951	0.6	19		1957	0.9	27
5	0256	7.9	241	20	0253	7.5	230
W	0926	3.3	102	Th	0922	2.7	81
	1215	4.6	141		1424	4.7	144
	2035	0.6	19		2026	0.9	27
6	0343	7.8	238	21	0323	7.5	228
Th	1013	3.2	97	F	0950	2.6	79
	1313	4.7	143		1456	4.9	149
	2122	0.9	26		2057	0.9	28
7	0429	7.6	231	22	0354	7.4	225
F	1100	3.0	90	Sa	1019	2.5	76
	1556	4.7	144		1532	5.0	153
	2213	1.3	39		2129	1.1	33
8	0515	7.3	221	23	0426	7.3	221
Sa	1147	2.7	83	Su	1050	2.4	72
	1704	4.8	147		1612	5.2	157
	2312	1.9	57		2159	1.4	43
9	0601	6.8	208	24	0457	7.0	214
Su	1236	2.5	77	M	1125	2.2	66
	1820	5.0	151		1658	5.2	159
					2227	1.9	57
10	0021	2.5	75	25	0524	6.7	203
M	0649	6.3	193	Tu	1204	2.0	62
	1327	2.4	73		1757	5.2	159
	1935	5.2	157		2302	2.5	76
11	0132	3.0	92	26	0531	6.2	189
Tu	0739	5.8	177	W	1247	1.9	58
	1420	2.3	69		1917	5.3	161
	2050	5.4	166		2352	3.2	98
12	0247	3.5	106	27	0548	5.7	175
W	0830	5.3	162	Th	1334	1.8	55
	1515	2.1	65		2052	5.6	170
	2211	5.9	179				
13	0424	3.7	114	28	0245	3.8	117
Th	0923	4.9	149	F	0623	5.2	160
	1612	1.9	59		1426	1.7	51
	2318	6.4	195		2212	6.1	185
14	0548	3.6	111	29	0439	3.9	120
F	1026	4.6	139	Sa	0707	4.8	145
	1706	1.7	51		1519	1.4	44
					2316	6.6	201
15	0007	6.9	209	30	0552	3.8	116
Sa	0639	3.5	106	Su	0759	4.4	134
	1127	4.4	133		1616	1.2	37
	1749	1.4	43				
				31	0015	7.1	215
				M	0652	3.7	112
					0859	4.2	128
					1800	1.0	29

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUERTO MONTT, CHILE, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm
1 M	0351	19.4	592
	1019	4.6	141
	1625	17.3	528
	2223	5.8	178
2 Tu	0432	18.9	576
	1100	5.0	152
	1709	17.3	526
	2310	6.2	189
3 W	0517	18.2	555
	1144	5.5	168
	1758	17.1	521
4 Th	0003	6.7	205
	0609	17.2	525
	1235	6.2	190
	1856	16.9	516
5 F	0109	7.3	222
	0716	16.1	491
	1341	6.9	211
	2009	16.9	514
6 Sa	0236	7.5	228
	0847	15.4	469
	1503	7.3	221
	2132	17.4	530
7 Su	0414	6.7	205
	1020	15.6	476
	1626	6.8	208
	2247	18.5	564
8 M	0528	5.2	159
	1135	16.5	504
	1732	5.8	177
	2349	19.8	605
9 Tu	0624	3.7	114
	1232	17.6	537
	1826	4.8	146
10 W	0041	21.0	639
	0713	2.7	82
	1320	18.5	563
	1914	4.0	123
11 Th	0128	21.7	661
	0757	2.1	65
	1404	19.0	579
	1959	3.7	112
12 F	0212	21.9	666
	0838	2.1	64
	1445	19.2	584
	2042	3.7	114
13 Sa	0253	21.6	657
	0918	2.5	75
	1525	19.0	579
	2122	4.2	127
14 Su	0331	20.9	637
	0954	3.2	97
	1602	18.6	567
	2201	4.9	149
15 M	0408	19.9	607
	1029	4.2	127
	1637	18.0	548
	2237	5.8	177
16 Tu	0442	18.7	569
	1100	5.3	162
	1711	17.3	526
	2312	6.9	210
17 W	0515	17.3	527
	1131	6.6	200
	1747	16.4	500
	2351	8.0	245
18 Th	0552	15.8	482
	1205	7.8	239
	1831	15.6	475
19 F	0041	9.2	279
	0644	14.4	438
	1253	9.0	274
	1936	14.9	455
20 Sa	0213	9.9	301
	0812	13.4	407
	1424	9.7	296
	2112	15.0	456
21 Su	0412	9.4	286
	1009	13.5	412
	1603	9.4	286
	2231	15.8	481
22 M	0516	8.1	246
	1114	14.4	440
	1704	8.4	257
	2321	17.0	517
23 Tu	0556	6.7	204
	1156	15.5	472
	1745	7.3	223
	2359	18.1	552
24 W	0629	5.4	166
	1231	16.5	502
	1822	6.2	190
25 Th	0035	19.2	584
	0702	4.4	135
	1305	17.3	528
	1857	5.3	161
26 F	0110	20.0	611
	0736	3.6	110
	1339	18.0	548
	1935	4.5	138
27 Sa	0147	20.6	629
	0812	3.1	95
	1415	18.5	564
	2013	4.0	123
28 Su	0224	21.0	639
	0849	2.9	87
	1451	18.9	575
	2052	3.8	115
29 M	0302	20.9	638
	0924	2.9	88
	1528	19.1	581
	2131	3.8	117
30 Tu	0338	20.5	626
	0959	3.2	99
	1605	19.0	580
	2210	4.2	129
31 W	0415	19.7	600
	1034	4.0	121
	1643	18.7	570
	2250	5.0	153

FEBRUARY

Day	Time	Height ft	Height cm
1 Th	0454	18.4	562
	1110	5.0	153
	1725	18.0	550
	2337	6.1	187
2 F	0540	16.8	511
	1155	6.4	195
	1819	17.1	522
3 Sa	0042	7.4	226
	0646	15.0	457
	1302	7.8	239
	1940	16.3	498
4 Su	0228	8.1	248
	0842	13.9	425
	1448	8.6	261
	2126	16.5	504
5 M	0425	7.2	218
	1040	14.7	448
	1633	7.7	236
	2254	17.8	544
6 Tu	0536	5.3	163
	1148	16.3	496
	1739	6.2	188
	2354	19.5	593
7 W	0627	3.7	113
	1235	17.8	542
	1829	4.7	144
8 Th	0042	20.7	632
	0709	2.6	78
	1316	18.9	575
	1913	3.6	111
9 F	0124	21.5	656
	0747	1.9	59
	1354	19.6	596
	1953	3.1	94
10 Sa	0202	21.8	663
	0823	1.8	56
	1429	19.8	604
	2029	3.0	92
11 Su	0237	21.5	656
	0855	2.2	67
	1501	19.7	601
	2103	3.3	102
12 M	0309	20.9	636
	0925	2.9	88
	1531	19.3	588
	2134	4.1	124
13 Tu	0338	19.8	605
	0951	3.9	119
	1558	18.6	568
	2202	5.1	154
14 W	0404	18.6	567
	1014	5.1	155
	1622	17.8	543
	2229	6.2	189
15 Th	0428	17.1	522
	1034	6.4	194
	1647	16.8	512
	2256	7.5	229
16 F	0453	15.6	474
	1057	7.7	235
	1717	15.7	480
	2332	8.9	270
17 Sa	0526	13.9	425
	1128	9.1	277
	1810	14.6	446
18 Su	0044	10.1	307
	0651	12.5	382
	1237	10.4	316
	2000	14.0	427
19 M	0351	9.9	302
	0956	12.6	385
	1534	10.3	315
	2206	14.8	452
20 Tu	0502	8.4	255
	1103	14.0	426
	1650	9.0	275
	2302	16.3	496
21 W	0538	6.8	207
	1141	15.4	468
	1731	7.5	228
	2342	17.7	541
22 Th	0610	5.3	161
	1214	16.7	509
	1808	6.0	183
23 F	0019	19.2	584
	0643	4.0	121
	1246	17.9	546
	1844	4.6	140
24 Sa	0055	20.4	621
	0717	2.9	87
	1321	19.0	579
	1922	3.4	104
25 Su	0132	21.3	649
	0752	2.1	63
	1356	19.9	607
	2001	2.5	77
26 M	0209	21.8	664
	0828	1.6	50
	1432	20.6	628
	2039	2.1	63
27 Tu	0246	21.8	663
	0903	1.7	52
	1508	20.9	636
	2118	2.2	67
28 W	0322	21.1	642
	0937	2.3	70
	1544	20.6	629
	2157	2.9	89

MARCH

Day	Time	Height ft	Height cm
1 Th	0359	19.8	603
	1011	3.5	106
	1622	19.8	605
	2238	4.2	128
2 F	0440	18.0	548
	1049	5.1	154
	1706	18.6	568
	2329	5.8	178
3 Sa	0531	15.9	486
	1137	6.9	211
	1805	17.2	524
4 Su	0044	7.4	227
	0656	14.1	431
	1257	8.6	261
	1941	16.2	493
5 M	0246	7.8	239
	0909	13.9	424
	1505	8.8	268
	2132	16.6	507
6 Tu	0427	6.5	198
	1044	15.4	468
	1636	7.3	224
	2251	18.1	552
7 W	0526	4.8	146
	1137	17.1	520
	1733	5.6	171
	2344	19.6	597
8 Th	0610	3.4	103
	1218	18.5	563
	1818	4.2	127
9 F	0027	20.7	630
	0648	2.4	74
	1255	19.5	595
	1857	3.1	96
10 Sa	0105	21.3	648
	0723	2.0	60
	1329	20.1	614
	1933	2.7	81
11 Su	0139	21.4	652
	0754	1.9	59
	1400	20.4	622
	2006	2.6	78
12 M	0211	21.1	644
	0823	2.3	69
	1429	20.3	619
	2036	2.9	87
13 Tu	0239	20.5	624
	0848	2.9	89
	1455	19.9	608
	2103	3.5	106
14 W	0305	19.5	595
	0911	3.8	117
	1518	19.3	589
	2128	4.4	135
15 Th	0328	18.3	558
	0930	5.0	151
	1539	18.5	563
	2152	5.6	170
16 F	0350	16.9	515
	0949	6.2	189
	1601	17.5	532
	2218	6.9	210
17 Sa	0413	15.4	470
	1010	7.5	230
	1626	16.3	496
	2250	8.3	252
18 Su	0444	13.9	425
	1038	8.9	272
	1707	15.1	459
	2349	9.5	290
19 M	0555	12.6	385
	1136	10.2	311
	1846	14.1	429
20 Tu	0222	9.8	299
	0853	12.5	382
	1424	10.6	322
	2102	14.5	441
21 W	0406	8.5	260
	1015	13.9	423
	1602	9.3	282
	2214	15.9	484
22 Th	0452	6.9	211
	1057	15.5	471
	1652	7.5	230
	2302	17.5	534
23 F	0529	5.3	162
	1134	17.0	519
	1734	5.8	176
	2343	19.1	583
24 Sa	0605	3.8	115
	1210	18.6	566
	1815	4.1	124
25 Su	0023	20.5	625
	0642	2.5	76
	1248	20.0	611
	1856	2.6	78
26 M	0104	21.5	656
	0720	1.5	47
	1326	21.3	649
	1937	1.5	45
27 Tu	0143	22.0	671
	0757	1.1	34
	1404	22.1	674
	2018	1.0	31
28 W	0223	21.8	664
	0834	1.3	41
	1442	22.3	680
	2059	1.3	39
29 Th	0302	20.9	636
	0910	2.2	68
	1521	21.8	664
	2141	2.3	71
30 F	0343	19.3	589
	0948	3.7	113
	1602	20.6	628
	2227	3.9	119
31 Sa	0429	17.4	531
	1031	5.5	169
	1650	19.0	579
	2323	5.7	175

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0531	15.5	473	16 M	0416	14.2	433
	1128	7.5	228		1006	8.7	266
	1757	17.4	530		1628	15.8	482
					2312	8.8	268
2 M	0046	7.2	218	17 Tu	0521	13.3	405
	0707	14.3	437		1104	9.7	297
	1259	8.8	267		1742	15.0	456
	1933	16.5	504				
3 Tu	0232	7.3	222	18 W	0055	9.2	281
	0857	14.7	448		0719	13.2	401
	1452	8.5	260		1255	10.2	310
	2110	16.9	516		1931	14.9	455
4 W	0355	6.3	192	19 Th	0235	8.5	260
	1012	16.0	488		0855	14.1	431
	1609	7.2	220		1445	9.3	284
	2221	18.0	549		2103	15.9	484
5 Th	0451	5.1	155	20 F	0342	7.3	221
	1102	17.4	531		0955	15.6	476
	1704	5.8	176		1554	7.8	238
	2312	19.0	580		2206	17.2	525
6 F	0534	4.1	125	21 Sa	0434	5.8	176
	1144	18.6	567		1043	17.3	526
	1749	4.6	140		1650	6.1	185
	2355	19.8	603		2259	18.7	569
7 Sa	0612	3.4	104	22 Su	0520	4.4	133
	1220	19.5	594		1128	19.0	578
	1829	3.7	114		1740	4.3	131
					2348	19.9	606
8 Su	0033	20.2	615	23 M	0604	3.1	96
	0647	3.1	93		1212	20.6	627
	1254	20.1	612		1828	2.8	84
	1904	3.2	99				
9 M	0107	20.2	617	24 Tu	0034	20.7	632
	0717	3.0	92		0646	2.3	70
	1325	20.4	621		1255	21.9	666
	1936	3.1	95		1914	1.7	51
10 Tu	0138	20.0	609	25 W	0118	21.1	643
	0744	3.2	99		0727	2.0	60
	1352	20.4	621		1337	22.6	690
	2004	3.3	100		1959	1.2	38
11 W	0206	19.5	593	26 Th	0202	20.8	634
	0808	3.8	115		0807	2.3	70
	1416	20.1	613		1418	22.7	691
	2031	3.7	114		2043	1.6	49
12 Th	0231	18.6	568	27 F	0246	19.9	606
	0829	4.5	138		0848	3.2	99
	1438	19.6	597		1501	22.0	670
	2055	4.5	138		2129	2.7	82
13 F	0254	17.6	537	28 Sa	0333	18.5	564
	0849	5.4	166		0931	4.7	143
	1459	18.8	574		1547	20.7	631
	2119	5.5	168		2220	4.2	128
14 Sa	0316	16.5	502	29 Su	0427	17.0	518
	0909	6.5	199		1021	6.3	193
	1521	17.9	546		1641	19.2	584
	2145	6.7	203		2321	5.7	174
15 Su	0341	15.3	467	30 M	0535	15.8	481
	0933	7.6	232		1126	7.8	237
	1548	16.9	515		1750	17.8	543
	2219	7.8	237				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0037	6.7	205	16 W	0516	14.6	444
	0658	15.3	467		1102	9.0	275
	1251	8.5	259		1724	16.3	497
	1911	17.2	523				
2 W	0158	6.9	210	17 Th	0012	8.1	246
	0819	15.7	478		0630	14.7	447
	1418	8.3	252		1220	9.1	278
	2031	17.2	523		1839	16.2	493
3 Th	0307	6.5	199	18 F	0128	7.8	238
	0925	16.5	504		0746	15.3	466
	1529	7.5	229		1344	8.7	265
	2138	17.6	535		1959	16.5	503
4 F	0404	6.0	182	19 Sa	0237	7.2	218
	1019	17.5	533		0855	16.3	497
	1627	6.6	201		1501	7.8	237
	2233	18.0	550		2114	17.1	522
5 Sa	0452	5.4	166	20 Su	0341	6.3	192
	1105	18.4	560		0956	17.6	537
	1717	5.7	174		1611	6.5	197
	2321	18.4	562		2220	17.9	547
6 Su	0534	5.0	153	21 M	0439	5.3	162
	1145	19.1	582		1052	19.1	583
	1801	5.0	153		1713	4.9	150
					2319	18.8	573
7 M	0003	18.7	569	22 Tu	0532	4.4	133
	0611	4.7	144		1144	20.6	628
	1222	19.6	598		1809	3.4	105
	1839	4.5	137				
8 Tu	0039	18.7	571	23 W	0013	19.5	595
	0644	4.7	142		0620	3.6	110
	1254	19.9	608		1232	21.9	666
	1911	4.2	129		1859	2.4	72
9 W	0112	18.6	567	24 Th	0103	19.9	606
	0711	4.8	145		0706	3.2	99
	1321	20.0	611		1319	22.6	688
	1941	4.2	129		1947	1.9	57
10 Th	0140	18.2	556	25 F	0152	19.8	604
	0736	5.1	155		0752	3.4	104
	1346	19.9	607		1405	22.6	690
	2007	4.5	137		2035	2.1	64
11 F	0206	17.7	539	26 Sa	0241	19.3	589
	0759	5.6	170		0838	4.0	123
	1410	19.6	596		1452	22.1	673
	2033	5.0	153		2124	2.9	87
12 Sa	0232	17.0	518	27 Su	0331	18.6	566
	0822	6.2	190		0927	5.0	153
	1435	19.0	578		1542	21.1	644
	2100	5.8	176		2215	3.9	119
13 Su	0259	16.2	495	28 M	0426	17.8	543
	0848	7.0	213		1020	6.1	185
	1502	18.2	555		1636	20.0	609
	2131	6.6	201		2311	4.9	150
14 M	0331	15.5	472	29 Tu	0525	17.2	525
	0920	7.8	237		1120	6.9	211
	1537	17.4	531		1734	19.0	578
	2210	7.3	224				
15 Tu	0415	14.9	454	30 W	0010	5.7	175
	1003	8.5	260		0626	16.9	516
	1622	16.8	511		1224	7.5	229
	2303	7.9	240		1835	18.1	553
				31 Th	0109	6.4	194
					0727	16.9	515
					1330	7.8	237
					1938	17.5	534

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0208	6.7	205	16 Sa	0036	6.7	204
	0827	17.1	520		0652	16.8	512
	1436	7.8	238		1257	7.6	233
	2043	17.1	522		1907	17.2	524
2 Sa	0306	6.9	211	17 Su	0138	6.9	209
	0926	17.4	530		0758	17.1	522
	1541	7.5	230		1412	7.5	229
	2146	17.0	517		2024	16.8	513
3 Su	0403	6.9	211	18 M	0248	6.9	209
	1022	17.8	544		0910	17.8	543
	1643	7.1	215		1535	6.9	210
	2245	17.0	519		2145	16.9	516
4 M	0455	6.7	204	19 Tu	0401	6.4	196
	1110	18.4	562		1020	18.9	576
	1735	6.3	193		1653	5.6	172
	2334	17.3	526		2258	17.6	535
5 Tu	0538	6.4	194	20 W	0506	5.6	172
	1152	19.0	580		1122	20.2	617
	1816	5.6	172		1755	4.2	127
6 W	0016	17.5	534	21 Th	0001	18.4	560
	0614	6.1	185		0603	4.8	145
	1227	19.5	595		1217	21.5	655
	1851	5.1	156		1849	2.9	89
7 Th	0050	17.7	539	22 F	0056	19.1	582
	0645	5.9	179		0654	4.1	124
	1257	19.8	605		1308	22.4	682
	1921	4.8	146		1938	2.2	68
8 F	0121	17.7	539	23 Sa	0146	19.5	595
	0713	5.8	177		0742	3.8	115
	1325	20.0	609		1356	22.7	692
	1950	4.7	144		2026	2.1	63
9 Sa	0151	17.6	535	24 Su	0234	19.6	598
	0741	5.9	180		0830	3.8	117
	1354	19.9	606		1444	22.5	686
	2020	4.9	150		2113	2.4	74
10 Su	0221	17.3	527	25 M	0321	19.5	594
	0811	6.2	188		0919	4.3	130
	1426	19.6	596		1531	21.9	667
	2053	5.3	162		2159	3.1	94
11 M	0255	17.0	517	26 Tu	0408	19.2	584
	0845	6.6	200		1007	4.9	149
	1501	19.1	582		1618	21.0	641
	2129	5.7	175		2244	3.9	119
12 Tu	0333	16.7	508	27 W	0454	18.7	571
	0925	7.0	212		1054	5.6	172
	1540	18.7	569		1703	20.0	609
	2210	6.1	187		2327	4.9	149
13 W	0416	16.5	502	28 Th	0540	18.2	556
	1009	7.3	222		1141	6.5	197
	1623	18.3	558		1748	18.8	573
	2253	6.4	195				
14 Th	0503	16.5	502	29 F	0011	5.9	181
	1059	7.5	228		0626	17.7	539
	1710	18.0	548		1231	7.4	225
	2342	6.6	200		1836	17.5	534
15 F	0555	16.6	506	30 Sa	0057	7.0	214
	1154	7.6	231		0717	17.1	521
	1804	17.6	537		1329	8.2	251
					1933	16.3	497

Time meridian 60°W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUERTO MONTT, CHILE, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0153	8.0	243	16 M	0046	6.9	211
	0818	16.7	508		0711	17.3	527
	1442	8.7	266		1333	7.6	233
	2045	15.5	471		1943	15.8	481
2 M	0302	8.5	260	17 Tu	0202	7.7	235
	0930	16.7	509		0834	17.3	526
	1604	8.5	259		1515	7.6	231
	2205	15.3	467		2126	15.5	471
3 Tu	0412	8.4	257	18 W	0336	7.7	234
	1034	17.3	526		1002	18.0	550
	1710	7.6	233		1648	6.3	192
	2308	15.8	481		2257	16.3	496
4 W	0507	7.9	240	19 Th	0457	6.7	204
	1124	18.0	550		1115	19.5	593
	1755	6.6	202		1753	4.6	140
	2354	16.4	501				
5 Th	0549	7.2	218	20 F	0002	17.6	536
	1202	18.9	575		0558	5.4	164
	1831	5.7	175		1213	20.9	638
					1845	3.2	97
6 F	0031	17.0	519	21 Sa	0054	18.8	572
	0623	6.5	197		0650	4.2	129
	1236	19.6	596		1304	22.0	670
	1903	5.0	153		1932	2.3	69
7 Sa	0103	17.5	534	22 Su	0140	19.6	597
	0656	5.9	180		0737	3.5	106
	1308	20.0	610		1350	22.5	687
	1934	4.6	140		2016	1.9	58
8 Su	0136	17.8	543	23 M	0223	20.0	611
	0729	5.5	169		0822	3.2	98
	1342	20.3	618		1433	22.5	687
	2007	4.4	134		2057	2.0	62
9 M	0209	17.9	547	24 Tu	0304	20.1	614
	0804	5.4	164		0905	3.3	102
	1417	20.3	619		1514	22.0	672
	2042	4.4	134		2136	2.6	78
10 Tu	0245	18.0	550	25 W	0343	19.9	607
	0841	5.4	164		0945	3.9	119
	1453	20.2	616		1552	21.2	645
	2118	4.5	137		2211	3.4	104
11 W	0321	18.1	551	26 Th	0419	19.4	592
	0920	5.4	166		1022	4.8	146
	1530	19.9	608		1627	20.0	609
	2154	4.7	143		2244	4.6	139
12 Th	0359	18.1	552	27 F	0454	18.6	568
	0959	5.6	170		1059	5.9	180
	1607	19.6	597		1702	18.5	564
	2230	5.0	151		2315	5.9	180
13 F	0437	18.1	552	28 Sa	0529	17.7	540
	1040	5.9	179		1136	7.2	220
	1646	19.0	579		1738	16.9	515
	2308	5.4	164		2348	7.3	223
14 Sa	0519	18.0	548	29 Su	0609	16.7	508
	1124	6.3	193		1222	8.5	260
	1730	18.1	552		1824	15.3	465
	2351	5.0	184				
15 Su	0608	17.7	539	30 M	0031	8.7	266
	1219	7.0	214		0705	15.7	479
	1825	16.9	516		1337	9.6	293
					1941	13.9	425
				31 Tu	0150	9.8	298
					0838	15.3	466
					1540	9.6	292
					2143	13.7	419

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0341	9.7	297	16 Th	0350	8.2	249
	1012	15.9	485		1013	17.6	536
	1700	8.4	255		1700	5.9	181
	2259	14.7	447		2312	16.2	494
2 Th	0453	8.8	267	17 F	0506	6.5	199
	1108	17.0	519		1122	19.3	588
	1743	7.0	214		1755	4.1	125
	2344	15.7	480				
3 F	0536	7.6	232	18 Sa	0004	17.8	544
	1148	18.2	554		0600	4.8	147
	1817	5.8	178		1214	20.8	635
					1840	2.7	82
4 Sa	0018	16.7	510	19 Su	0048	19.2	584
	0611	6.5	198		0647	3.5	106
	1223	19.2	584		1258	21.9	667
	1848	4.9	148		1921	1.8	56
5 Su	0050	17.6	535	20 M	0128	20.1	612
	0645	5.5	169		0729	2.7	81
	1257	19.9	608		1339	22.3	681
	1920	4.1	126		1959	1.5	46
6 M	0122	18.2	554	21 Tu	0205	20.6	627
	0719	4.8	147		0809	2.4	72
	1331	20.5	626		1417	22.2	678
	1953	3.6	110		2035	1.7	51
7 Tu	0155	18.7	569	22 W	0241	20.6	629
	0755	4.3	130		0845	2.5	77
	1406	20.9	636		1452	21.7	662
	2028	3.3	101		2107	2.3	69
8 W	0230	19.1	581	23 Th	0314	20.3	620
	0832	3.9	120		0919	3.1	96
	1441	20.9	637		1524	20.7	632
	2101	3.2	99		2137	3.2	98
9 Th	0304	19.3	589	24 F	0344	19.7	600
	0909	3.9	118		0951	4.2	127
	1516	20.6	629		1553	19.4	592
	2134	3.5	106		2203	4.5	136
10 F	0339	19.4	591	25 Sa	0411	18.8	572
	0945	4.1	126		1021	5.4	166
	1550	20.0	609		1622	17.8	544
	2207	4.0	122		2227	5.9	181
11 Sa	0414	19.2	584	26 Su	0439	17.6	537
	1023	4.8	145		1051	6.9	211
	1626	18.9	577		1651	16.1	491
	2241	4.9	149		2252	7.5	228
12 Su	0453	18.6	567	27 M	0512	16.3	498
	1105	5.7	175		1130	8.5	258
	1708	17.5	532		1730	14.4	438
	2321	6.1	187		2326	9.0	275
13 M	0541	17.7	539	28 Tu	0605	15.1	459
	1201	7.0	213		1247	9.8	298
	1805	15.7	478		1855	12.9	394
14 Tu	0018	7.6	231	29 W	0043	10.4	316
	0651	16.7	510		0753	14.3	436
	1329	8.1	246		1527	9.7	297
	1945	14.3	437		2137	13.0	397
15 W	0153	8.6	263	30 Th	0326	10.2	312
	0835	16.5	502		0952	15.1	459
	1535	7.7	234		1644	8.3	254
	2151	14.6	446		2246	14.3	436
				31 F	0438	8.9	271
					1049	16.4	500
					1722	6.9	209
					2323	15.6	477

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0517	7.4	227	16 Su	0546	4.1	125
	1127	17.7	541		1156	20.6	629
	1752	5.5	168		1818	2.5	75
	2355	16.8	513				
2 Su	0551	6.1	185	17 M	0025	19.7	599
	1201	19.0	579		0629	2.9	89
	1823	4.4	133		1237	21.4	652
					1855	1.8	56
3 M	0026	17.9	546	18 Tu	0102	20.4	623
	0625	4.8	146		0708	2.2	68
	1235	20.0	611		1315	21.6	659
	1855	3.4	103		1930	1.6	50
4 Tu	0058	18.9	576	19 W	0136	20.8	635
	0700	3.7	112		0745	2.0	61
	1310	20.9	636		1350	21.4	653
	1929	2.6	79		2002	1.9	57
5 W	0131	19.8	602	20 Th	0208	20.9	636
	0737	2.8	86		0818	2.2	68
	1346	21.4	651		1422	20.8	635
	2003	2.1	65		2031	2.5	76
6 Th	0206	20.4	623	21 F	0238	20.5	625
	0815	2.3	70		0849	2.9	87
	1422	21.4	653		1451	19.8	605
	2037	2.1	63		2056	3.4	105
7 F	0241	20.8	634	22 Sa	0304	19.8	604
	0852	2.3	69		0917	3.8	117
	1457	20.9	638		1518	18.6	566
	2111	2.5	75		2119	4.7	142
8 Sa	0317	20.7	631	23 Su	0328	18.8	574
	0930	2.8	85		0943	5.1	156
	1534	19.9	606		1542	17.1	521
	2144	3.4	104		2140	6.1	185
9 Su	0354	20.1	612	24 M	0351	17.7	538
	1011	3.9	118		1010	6.6	200
	1613	18.3	559		1607	15.5	472
	2221	4.8	146		2201	7.5	230
10 M	0435	19.0	578	25 Tu	0418	16.3	497
	1057	5.4	164		1044	8.1	246
	1700	16.4	501		1640	13.9	424
	2306	6.5	199		2230	9.0	274
11 Tu	0530	17.6	535	26 W	0500	15.0	456
	1204	7.0	212		1147	9.4	288
	1815	14.6	446		1758	12.6	383
					2329	10.3	314
12 W	0017	8.2	249	27 Th	0639	13.9	425
	0656	16.4	499		1414	9.7	296
	1353	7.7	236		2044	12.7	386
	2015	14.0	427				
13 Th	0215	8.7	266	28 F	0222	10.5	320
	0846	16.5	503		0854	14.4	438
	1542	6.8	207		1552	8.6	261
	2201	15.2	463		2158	13.9	425
14 F	0356	7.5	228	29 Sa	0349	9.2	281
	1012	17.8	544		1000	15.6	477
	1649	5.1	155		1634	7.1	217
	2300	16.9	515		2237	15.4	468
15 Sa	0458	5.7	174	30 Su	0434	7.6	233
	1110	19.4	592		1043	17.1	521
	1737	3.5	108		1708	5.7	173
	2345	18.4	562		2312	16.8	511

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0513	6.0	184	16 Tu	0605	3.4	105
	1122	18.5	563		1210	20.0	610
	1742	4.4	133		1823	2.9	88
	2346	18.1	553				
2 Tu	0552	4.5	138	17 W	0031	20.1	614
	1200	19.7	600		0644	2.9	88
	1818	3.2	97		1248	20.1	612
					1857	2.8	86
3 W	0022	19.5	593	18 Th	0106	20.5	624
	0631	3.1	95		0720	2.7	82
	1239	20.6	629		1322	19.8	605
	1854	2.3	69		1928	3.1	93
4 Th	0059	20.6	629	19 F	0136	20.5	624
	0712	2.0	61		0752	2.9	88
	1318	21.2	645		1353	19.3	588
	1931	1.7	53		1955	3.6	110
5 F	0137	21.5	655	20 Sa	0203	20.1	614
	0752	1.4	42		0820	3.4	104
	1357	21.1	644		1421	18.5	563
	2007	1.7	53		2018	4.4	135
6 Sa	0215	21.9	666	21 Su	0227	19.5	595
	0833	1.4	44		0846	4.3	130
	1436	20.5	624		1446	17.4	530
	2044	2.4	73		2039	5.4	166
7 Su	0253	21.5	656	22 M	0249	18.6	568
	0914	2.2	67		0911	5.3	163
	1517	19.2	585		1509	16.2	493
	2121	3.6	111		2059	6.6	201
8 M	0333	20.5	626	23 Tu	0311	17.6	536
	0959	3.6	110		0936	6.6	201
	1602	17.5	533		1533	15.0	456
	2203	5.3	161		2121	7.8	237
9 Tu	0421	19.1	581	24 W	0337	16.5	502
	1053	5.3	162		1008	7.8	238
	1700	15.7	478		1606	13.8	421
	2258	7.1	216		2152	8.9	272
10 W	0524	17.5	532	25 Th	0414	15.3	467
	1210	6.8	206		1100	8.9	271
	1830	14.4	440		1710	12.9	394
					2247	9.9	302
11 Th	0022	8.4	256	26 F	0526	14.4	439
	0655	16.5	503		1246	9.3	284
	1352	7.1	216		1913	12.8	391
	2016	14.6	445				
12 F	0213	8.3	254	27 Sa	0045	10.3	315
	0833	16.7	510		0718	14.3	436
	1517	6.3	191		1421	8.7	266
	2136	15.8	483		2042	13.8	420
13 Sa	0334	7.1	217	28 Su	0232	9.5	290
	0947	17.7	541		0848	15.2	462
	1618	5.1	155		1525	7.6	231
	2230	17.3	526		2137	15.1	461
14 Su	0433	5.6	172	29 M	0337	8.1	248
	1042	18.8	573		0548	16.3	498
	1704	4.1	124		1613	6.3	192
	2314	18.5	565		2222	16.6	505
15 M	0521	4.4	134	30 Tu	0430	6.6	200
	1128	19.6	597		1038	17.6	535
	1745	3.3	101		1657	5.0	153
	2354	19.5	594		2306	18.1	552
				31 W	0518	5.0	151
					1125	18.7	570
					1740	3.9	118
					2348	19.6	598

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0605	3.4	104	16 F	0042	19.9	607
	1211	19.6	597		0703	3.8	115
	1822	3.0	91		1302	18.3	557
					1902	4.5	138
2 F	0030	20.9	638	17 Sa	0112	20.0	609
	0651	2.2	67		0734	3.8	115
	1256	20.1	612		1333	17.9	547
	1903	2.5	75		1929	4.9	148
3 Sa	0112	21.9	666	18 Su	0139	19.8	603
	0735	1.5	46		0802	4.1	125
	1339	20.1	612		1401	17.4	531
	1944	2.5	76		1953	5.4	165
4 Su	0154	22.1	675	19 M	0204	19.3	589
	0820	1.6	48		0829	4.7	142
	1423	19.5	594		1428	16.7	509
	2025	3.1	96		2015	6.1	186
5 M	0237	21.7	662	20 Tu	0228	18.7	569
	0906	2.3	71		0855	5.4	166
	1510	18.4	560		1454	15.9	484
	2109	4.3	132		2040	6.9	210
6 Tu	0323	20.7	630	21 W	0255	17.8	544
	0956	3.6	110		0924	6.3	193
	1603	17.1	520		1525	15.1	461
	2159	5.8	176		2110	7.7	235
7 W	0417	19.3	587	22 Th	0327	17.0	519
	1055	5.0	152		1000	7.2	219
	1709	15.9	485		1605	14.5	441
	2302	7.1	217		2149	8.4	257
8 Th	0523	18.0	548	23 F	0408	16.2	495
	1208	6.0	183		1048	7.8	238
	1828	15.4	470		1659	14.1	430
					2243	9.0	275
9 F	0023	7.9	240	24 Sa	0503	15.7	478
	0642	17.2	525		1151	8.1	246
	1325	6.3	192		1808	14.1	431
	1948	15.7	480		2355	9.2	281
10 Sa	0148	7.7	236	25 Su	0611	15.4	470
	0800	17.1	522		1301	8.0	243
	1435	6.1	185		1921	14.6	445
	2056	16.5	504				
11 Su	0259	7.1	215	26 M	0116	9.0	273
	0909	17.4	531		0728	15.5	473
	1534	5.6	171		1408	7.5	230
	2151	17.4	531		2029	15.5	471
12 M	0401	6.2	190	27 Tu	0233	8.3	252
	1007	17.8	542		0845	15.9	485
	1626	5.2	157		1512	6.9	209
	2241	18.3	557		2131	16.6	505
13 Tu	0455	5.4	164	28 W	0346	7.2	218
	1059	18.1	552		0955	16.6	506
	1713	4.8	145		1613	6.0	183
	2326	19.0	580		2228	17.9	547
14 W	0544	4.7	142	29 Th	0451	5.7	173
	1145	18.3	559		1056	17.5	532
	1754	4.5	137		1708	5.0	153
					2320	19.5	593
15 Th	0006	19.6	597	30 F	0547	4.1	124
	0626	4.1	125		1152	18.3	559
	1226	18.4	561		1757	4.1	125
	1831	4.4	134				

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0010	20.9	636	16 Su	0053	19.6	598
	0638	2.7	81		0718	4.3	132
	1243	19.0	580		1318	17.4	529
	1845	3.4	104		1910	5.5	168
2 Su	0057	21.9	668	17 M	0122	19.7	601
	0726	1.8	54		0747	4.3	131
	1332	19.3	589		1347	17.2	525
	1930	3.2	97		1937	5.6	170
3 M	0144	22.4	682	18 Tu	0149	19.6	597
	0814	1.6	48		0815	4.5	137
	1420	19.2	585		1416	17.0	517
	2017	3.4	105		2005	5.8	178
4 Tu	0231	22.1	675	19 W	0218	19.3	587
	0902	2.0	62		0845	4.9	149
	1510	18.7	570		1446	16.6	507
	2106	4.1	126		2036	6.2	190
5 W	0321	21.4	653	20 Th	0250	18.8	573
	0953	2.9	87		0918	5.3	163
	1603	18.1	551		1520	16.3	497
	2159	5.1	154		2110	6.7	203
6 Th	0414	20.4	622	21 F	0324	18.3	557
	1047	3.8	117		0953	5.8	177
	1700	17.5	534		1557	16.1	490
	2256	5.9	180		2149	7.1	215
7 F	0510	19.4	590	22 Sa	0401	17.8	542
	1144	4.7	143		1031	6.2	188
	1759	17.2	524		1638	16.0	487
	2359	6.6	200		2233	7.3	224
8 Sa	0609	18.4	561	23 Su	0442	17.4	529
	1241	5.4	165		1112	6.4	196
	1859	17.1	520		1723	16.0	487
					2321	7.6	231
9 Su	0103	7.0	213	24 M	0528	16.9	515
	0710	17.6	535		1158	6.7	205
	1338	6.0	183		1815	16.0	488
	1959	17.1	520				
10 M	0208	7.3	221	25 Tu	0017	7.8	239
	0814	16.9	514		0623	16.3	496
	1437	6.5	197		1254	7.1	216
	2101	17.2	524		1917	16.1	491
11 Tu	0317	7.2	220	26 W	0127	8.0	244
	0922	16.4	501		0736	15.6	477
	1539	6.7	203		1404	7.3	224
	2201	17.6	535		2032	16.5	503
12 W	0426	6.8	207	27 Th	0257	7.7	235
	1027	16.4	499		0908	15.5	471
	1637	6.6	200		1525	7.2	218
	2256	18.1	551		2150	17.5	532
13 Th	0524	6.1	185	28 F	0427	6.5	198
	1124	16.6	507		1033	16.1	490
	1727	6.2	190		1640	6.3	193
	2342	18.7	571		2258	18.9	576
14 F	0611	5.3	162	29 Sa	0535	4.8	145
	1210	17.0	518		1141	17.2	523
	1808	5.8	178		1741	5.2	158
					2356	20.5	624
15 Sa	0021	19.3	587	30 Su	0630	3.1	95
	0648	4.7	143		1237	18.3	557
	1247	17.3	526		1833	4.1	124
	1841	5.6	171				
				31 M	0048	21.8	663
					0719	2.0	60
					1327	19.1	582
					1923	3.3	102

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

VALPARAISO, CHILE, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0046	5.5	168	16 Tu	0124	5.1	154
	0733	1.2	38		0802	1.3	41
	1328	3.9	119		1403	4.1	125
	1903	1.8	54		1954	1.9	59
2 Tu	0127	5.3	161	17 W	0202	4.6	139
	0813	1.3	40		0838	1.6	49
	1416	4.0	122		1451	4.1	124
	1955	1.9	59		2045	2.3	69
3 W	0211	5.0	151	18 Th	0241	4.1	124
	0855	1.4	42		0916	1.8	56
	1510	4.1	125		1548	4.0	123
	2053	2.1	65		2156	2.6	78
4 Th	0300	4.6	140	19 F	0330	3.6	110
	0941	1.5	45		1000	2.0	62
	1612	4.3	131		1700	4.1	125
	2208	2.3	70		2352	2.6	79
5 F	0400	4.2	128	20 Sa	0449	3.3	100
	1033	1.6	48		1057	2.2	66
	1719	4.6	140		1810	4.3	131
	2340	2.3	69				
6 Sa	0516	3.8	117	21 Su	0119	2.4	74
	1130	1.6	50		0628	3.1	96
	1822	4.9	150		1202	2.2	68
					1907	4.5	138
7 Su	0104	2.0	61	22 M	0217	2.1	65
	0635	3.7	112		0738	3.2	98
	1229	1.7	51		1302	2.2	66
	1920	5.3	162		1955	4.8	147
8 M	0213	1.6	50	23 Tu	0259	1.8	56
	0748	3.7	112		0830	3.3	102
	1326	1.6	49		1352	2.0	62
	2015	5.7	173		2038	5.1	155
9 Tu	0310	1.3	39	24 W	0335	1.5	47
	0850	3.7	114		0913	3.5	107
	1421	1.5	46		1437	1.8	56
	2107	6.0	182		2118	5.3	163
10 W	0359	1.0	31	25 Th	0408	1.3	40
	0943	3.9	118		0951	3.7	112
	1513	1.3	41		1518	1.6	50
	2156	6.1	187		2156	5.6	170
11 Th	0443	0.9	26	26 F	0441	1.1	35
	1029	4.0	122		1027	3.8	116
	1602	1.2	38		1558	1.4	44
	2241	6.2	189		2232	5.7	174
12 F	0525	0.8	24	27 Sa	0513	1.0	31
	1113	4.1	125		1102	4.0	121
	1650	1.2	37		1637	1.3	39
	2325	6.1	186		2308	5.8	176
13 Sa	0606	0.9	26	28 Su	0546	0.9	28
	1155	4.1	126		1138	4.1	126
	1736	1.2	38		1718	1.2	37
					2345	5.7	175
14 Su	0006	5.9	179	29 M	0620	0.9	27
	0646	1.0	30		1216	4.3	131
	1237	4.2	127		1801	1.2	37
	1821	1.4	42				
15 M	0046	5.5	168	30 Tu	0022	5.5	169
	0724	1.1	35		0655	0.9	28
	1319	4.1	126		1256	4.4	135
	1907	1.6	50		1847	1.3	41
				31 W	0101	5.2	159
					0731	1.0	31
					1340	4.5	137
					1938	1.6	48

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0143	4.8	146	16 F	0153	3.8	115
	0809	1.2	37		0806	1.8	56
	1431	4.6	139		1438	4.2	127
	2036	1.9	57		2104	2.4	72
2 F	0231	4.2	129	17 Sa	0235	3.3	102
	0853	1.4	44		0837	2.1	64
	1532	4.6	140		1536	4.1	124
	2155	2.1	64		2258	2.5	77
3 Sa	0334	3.7	113	18 Su	0345	3.0	92
	0946	1.7	52		0926	2.3	70
	1646	4.7	142		1701	4.1	124
	2340	2.1	65				
4 Su	0509	3.3	102	19 M	0049	2.3	71
	1057	1.9	58		0607	2.9	89
	1804	4.9	148		1101	2.4	74
					1823	4.3	130
5 M	0113	1.9	57	20 Tu	0150	2.1	63
	0648	3.3	100		0726	3.1	93
	1215	1.9	59		1233	2.3	71
	1914	5.1	156		1923	4.5	138
6 Tu	0219	1.5	46	21 W	0232	1.7	53
	0801	3.4	105		0815	3.3	100
	1323	1.8	54		1333	2.1	64
	2014	5.4	165		2011	4.9	148
7 W	0308	1.2	37	22 Th	0306	1.4	44
	0854	3.7	112		0852	3.5	107
	1421	1.5	47		1419	1.8	54
	2104	5.7	173		2053	5.2	157
8 Th	0349	1.0	30	23 F	0337	1.2	36
	0937	3.9	119		0926	3.8	115
	1511	1.3	39		1501	1.5	45
	2148	5.8	178		2130	5.4	165
9 F	0426	0.9	26	24 Sa	0407	1.0	29
	1016	4.1	125		0959	4.1	124
	1556	1.1	33		1540	1.1	35
	2228	5.9	179		2206	5.6	171
10 Sa	0501	0.8	24	25 Su	0437	0.8	24
	1052	4.3	130		1032	4.3	132
	1638	1.0	31		1620	0.9	28
	2305	5.7	175		2241	5.6	172
11 Su	0535	0.8	25	26 M	0507	0.7	20
	1128	4.4	133		1107	4.6	141
	1720	1.0	32		1701	0.8	25
	2340	5.5	167		2318	5.5	169
12 M	0607	0.9	28	27 Tu	0539	0.6	19
	1204	4.4	135		1144	4.9	148
	1800	1.2	37		1745	0.8	25
					2355	5.3	161
13 Tu	0014	5.1	156	28 W	0613	0.7	20
	0639	1.1	34		1225	5.0	153
	1240	4.4	135		1833	1.0	30
	1841	1.5	45				
14 W	0047	4.7	143				
	0710	1.3	40				
	1317	4.4	133				
	1922	1.8	54				
15 Th	0120	4.2	129				
	0738	1.6	48				
	1355	4.3	130				
	2006	2.1	63				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0036	4.9	148	16 F	0047	3.8	117
	0649	0.9	26		0643	1.6	50
	1309	5.1	154		1309	4.5	138
	1926	1.2	38		1941	1.9	57
2 F	0121	4.3	132	17 Sa	0121	3.4	105
	0728	1.1	35		0707	1.9	58
	1400	5.0	151		1347	4.4	133
	2030	1.6	48		2035	2.1	64
3 Sa	0215	3.8	115	18 Su	0205	3.1	95
	0814	1.5	46		0736	2.2	66
	1502	4.8	147		1436	4.2	128
	2156	1.8	56		2208	2.3	69
4 Su	0333	3.3	100	19 M	0319	2.9	87
	0914	1.9	57		0821	2.4	73
	1621	4.7	143		1548	4.1	124
	2343	1.8	56				
5 M	0527	3.1	94	20 Tu	0005	2.2	66
	1042	2.1	64		0556	2.9	87
	1750	4.7	144		0957	2.6	78
					1728	4.1	125
6 Tu	0108	1.6	49	21 W	0108	1.9	59
	0700	3.2	99		0707	3.1	93
	1213	2.0	62		1203	2.4	74
	1904	4.9	150		1842	4.3	132
7 W	0205	1.3	40	22 Th	0150	1.6	50
	0759	3.5	107		0748	3.3	102
	1323	1.8	54		1308	2.1	65
	2003	5.1	156		1935	4.6	141
8 Th	0248	1.1	34	23 F	0224	1.4	42
	0842	3.8	116		0821	3.7	112
	1417	1.5	45		1356	1.8	54
	2050	5.3	162		2018	4.9	150
9 F	0325	1.0	29	24 Sa	0255	1.1	34
	0919	4.1	124		0853	4.0	123
	1503	1.2	37		1439	1.4	42
	2130	5.4	164		2057	5.2	157
10 Sa	0357	0.9	26	25 Su	0325	0.9	26
	0954	4.3	131		0926	4.4	135
	1545	1.0	32		1520	1.0	31
	2206	5.3	163		2134	5.3	161
11 Su	0427	0.8	25	26 M	0355	0.7	20
	1027	4.5	138		1001	4.9	148
	1625	1.0	30		1603	0.8	24
	2240	5.2	158		2212	5.3	161
12 M	0457	0.9	26	27 Tu	0426	0.5	16
	1100	4.7	142		1037	5.2	159
	1704	1.0	31		1647	0.6	19
	2312	4.9	150		2251	5.1	156
13 Tu	0525	1.0	30	28 W	0500	0.5	16
	1133	4.7	144		1116	5.5	167
	1742	1.1	35		1734	0.7	20
	2344	4.6	140		2332	4.8	146
14 W	0553	1.1	35	29 Th	0535	0.7	20
	1205	4.7	144		1159	5.6	170
	1820	1.3	41		1825	0.8	24
15 Th	0015	4.2	128	30 F	0018	4.4	133
	0620	1.4	42		0614	0.9	28
	1236	4.7	142		1246	5.5	168
	1859	1.6	49		1923	1.0	32
				31 Sa	0111	3.9	118
					0658	1.3	39
					1339	5.3	161
					2032	1.3	41

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Su	0216	3.4	105	16 M	0153	3.1	94
	0751	1.7	51		0704	2.2	67
	1443	5.0	152		1402	4.5	136
	2156	1.5	47		2130	2.0	62
2 M	0344	3.1	96	17 Tu	0310	2.9	89
	0902	2.0	61		0757	2.4	74
	1602	4.8	145		1505	4.3	130
	2327	1.5	47		2302	2.0	61
3 Tu	0529	3.2	97	18 W	0512	3.0	90
	1036	2.1	65		0925	2.6	78
	1728	4.7	142		1627	4.2	128
4 W	0039	1.4	44	19 Th	0009	1.8	56
	0645	3.4	104		0621	3.2	98
	1204	2.0	62		1117	2.5	76
	1840	4.7	144		1747	4.3	131
5 Th	0132	1.3	39	20 F	0054	1.6	49
	0736	3.7	113		0704	3.5	108
	1312	1.8	54		1231	2.2	67
	1937	4.8	146		1846	4.5	137
6 F	0213	1.1	35	21 Sa	0131	1.4	42
	0816	4.0	123		0740	3.9	120
	1405	1.5	46		1326	1.8	56
	2023	4.9	148		1934	4.7	142
7 Sa	0248	1.0	32	22 Su	0204	1.1	34
	0852	4.3	132		0815	4.4	134
	1451	1.3	40		1414	1.4	44
	2103	4.8	147		2018	4.8	146
8 Su	0319	1.0	30	23 M	0237	0.9	28
	0927	4.6	140		0851	4.9	149
	1533	1.2	36		1500	1.1	34
	2139	4.7	144		2100	4.9	148
9 M	0347	1.0	30	24 Tu	0311	0.8	23
	1000	4.8	147		0930	5.3	163
	1612	1.1	34		1548	0.8	25
	2213	4.6	139		2144	4.8	146
10 Tu	0415	1.0	32	25 W	0347	0.7	20
	1032	5.0	151		1010	5.7	175
	1650	1.1	35		1636	0.7	20
	2245	4.3	132		2228	4.6	140
11 W	0443	1.2	36	26 Th	0424	0.7	21
	1103	5.0	153		1053	6.0	182
	1727	1.2	37		1728	0.6	19
	2317	4.1	125		2317	4.3	132
12 Th	0510	1.3	41	27 F	0505	0.9	26
	1133	5.0	153		1139	6.0	183
	1804	1.3	41		1823	0.7	22
	2350	3.8	117				
13 F	0535	1.5	47	28 Sa	0010	4.0	122
	1203	5.0	151		0550	1.1	34
	1843	1.5	46		1230	5.8	178
					1923	0.9	28
14 Sa	0024	3.5	108	29 Su	0110	3.7	113
	0600	1.8	54		0642	1.4	44
	1236	4.8	147		1326	5.5	169
	1925	1.7	52		2029	1.1	35
15 Su	0103	3.3	101	30 M	0218	3.4	105
	0628	2.0	60		0743	1.8	54
	1314	4.7	142		1429	5.2	159
	2017	1.9	57		2140	1.3	40

MAY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Tu	0337	3.3	102	16 W	0249	3.2	97
	0857	2.0	61		0754	2.3	71
	1539	4.9	149		1437	4.6	140
	2252	1.4	43		2159	1.8	55
2 W	0501	3.4	105	17 Th	0406	3.2	99
	1018	2.1	65		0904	2.4	74
	1654	4.7	142		1540	4.5	136
	2356	1.4	43		2258	1.7	53
3 Th	0610	3.7	112	18 F	0516	3.5	106
	1141	2.1	63		1027	2.4	74
	1803	4.5	137		1648	4.4	133
					2348	1.6	49
4 F	0047	1.4	42	19 Sa	0609	3.8	117
	0702	4.0	121		1147	2.3	69
	1251	1.9	59		1751	4.4	133
	1901	4.4	135				
5 Sa	0129	1.3	40	20 Su	0031	1.4	44
	0745	4.3	130		0653	4.3	130
	1349	1.7	53		1253	2.0	60
	1950	4.3	132		1848	4.4	134
6 Su	0205	1.3	39	21 M	0111	1.3	39
	0823	4.6	140		0735	4.8	146
	1439	1.6	48		1350	1.6	49
	2032	4.2	129		1940	4.4	134
7 M	0237	1.3	39	22 Tu	0150	1.1	34
	0859	4.9	148		0818	5.3	161
	1523	1.4	44		1444	1.3	39
	2111	4.1	126		2031	4.4	133
8 Tu	0307	1.3	39	23 W	0231	1.0	30
	0933	5.1	154		0902	5.7	175
	1602	1.3	41		1537	1.0	29
	2148	4.0	123		2123	4.3	131
9 W	0337	1.3	41	24 Th	0314	1.0	29
	1006	5.2	159		0948	6.1	185
	1639	1.3	40		1630	0.8	23
	2223	3.9	119		2215	4.2	128
10 Th	0406	1.4	44	25 F	0359	1.0	30
	1037	5.3	161		1036	6.2	190
	1715	1.3	40		1723	0.7	21
	2258	3.8	115		2308	4.1	124
11 F	0435	1.6	48	26 Sa	0446	1.1	33
	1108	5.3	161		1126	6.2	190
	1751	1.4	42		1818	0.7	21
	2334	3.6	111				
12 Sa	0505	1.7	52	27 Su	0004	3.9	120
	1141	5.2	159		0538	1.2	38
	1830	1.4	44		1218	6.0	184
					1914	0.9	26
13 Su	0012	3.5	106	28 M	0102	3.8	116
	0537	1.8	56		0634	1.4	44
	1216	5.1	155		1313	5.7	175
	1913	1.6	48		2010	1.0	31
14 M	0055	3.3	102	29 Tu	0202	3.7	113
	0613	2.0	61		0734	1.7	51
	1256	5.0	151		1409	5.4	164
	2001	1.7	51		2107	1.2	37
15 Tu	0146	3.2	99	30 W	0305	3.7	112
	0658	2.2	66		0838	1.9	57
	1343	4.8	145		1507	5.0	151
	2057	1.8	54		2204	1.4	42
				31 Th	0413	3.7	114
					0946	2.1	63
					1608	4.6	139
					2300	1.5	46

JUNE

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 F	0522	3.9	118	16 Sa	0414	3.8	117
	1105	2.2	67		0949	2.3	69
	1714	4.2	129		1559	4.4	133
	2352	1.6	48		2244	1.6	48
2 Sa	0629	4.1	126	17 Su	0515	4.2	127
	1225	2.2	66		1110	2.2	68
	1817	4.0	121		1703	4.1	126
					2333	1.5	46
3 Su	0037	1.6	49	18 M	0610	4.6	139
	0709	4.4	135		1228	2.1	63
	1332	2.0	61		1809	4.0	122
	1914	3.8	117				
4 M	0118	1.6	49	19 Tu	0022	1.4	44
	0753	4.7	143		0702	5.0	152
	1428	1.8	56		1336	1.7	53
	2004	3.7	114		1914	3.9	119
5 Tu	0156	1.6	49	20 W	0112	1.4	42
	0832	5.0	151		0753	5.4	166
	1514	1.7	51		1437	1.4	42
	2049	3.7	113		2016	3.9	119
6 W	0232	1.6	49	21 Th	0202	1.3	39
	0909	5.2	157		0845	5.8	178
	1554	1.5	46		1533	1.0	32
	2130	3.7	112		2115	3.9	120
7 Th	0306	1.6	50	22 F	0254	1.2	36
	0944	5.3	161		0936	6.1	186
	1630	1.4	43		1625	0.8	24
	2208	3.7	112		2209	4.0	121
8 F	0340	1.6	50	23 Sa	0345	1.1	34
	1018	5.4	164		1026	6.3	191
	1705	1.3	41		1715	0.7	20
	2246	3.6	111		2301	4.0	123
9 Sa	0414	1.7	51	24 Su	0436	1.1	34
	1052	5.4	165		1115	6.3	191
	1740	1.3	40		1803	0.7	20
	2324	3.6	111		2351	4.0	123
10 Su	0450	1.7	52	25 M	0528	1.1	35
	1127	5.4	165		1204	6.1	185
	1817	1.3	41		1851	0.8	24
11 M	0003	3.6	109	26 Tu	0040	4.0	123
	0527	1.8	54		0620	1.2	38
	1204	5.3	163		1252	5.8	176
	1857	1.4	42		1937	1.0	29
12 Tu	0045	3.5	108	27 W	0130	4.0	122
	0608	1.8	56		0713	1.5	45
	1244	5.2	159		1338	5.3	163
	1939	1.4	44		2023	1.1	35
13 W	0129	3.5	108	28 Th	0222	4.0	121
	0654	1.9	59		0808	1.7	53
	1326	5.1	154		1425	4.9	148
	2022	1.5	46		2108	1.4	42
14 Th	0218	3.6	109	29 F	0318	4.0	121
	0745	2.1	63		0907	2.0	62
	1412	4.8	147		1514	4.3	132
	2108	1.6	48		2155	1.6	48
15 F	0313	3.7	112	30 Sa	0422	4.0	123
	0842	2.2	66		1021	2.3	69
	1502	4.6	140		1611	3.9	118
	2155	1.6	49		2244	1.7	53

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

VALPARAISO, CHILE, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0529	4.2	127	16 M	0430	4.4	135
	1154	2.3	71		1050	2.2	66
	1724	3.5	108		1629	3.7	114
	2337	1.9	57		2244	1.6	49
2 M	0628	4.4	133	17 Tu	0537	4.7	143
	1314	2.2	68		1222	2.0	62
	1837	3.3	102		1751	3.5	107
					2347	1.7	51
3 Tu	0029	1.9	58	18 W	0642	5.0	153
	0720	4.6	140		1338	1.7	51
	1415	2.0	61		1911	3.5	106
	1940	3.3	102				
4 W	0118	1.9	58	19 Th	0051	1.6	49
	0806	4.8	147		0742	5.4	164
	1502	1.8	54		1439	1.3	40
	2031	3.4	103		2019	3.6	109
5 Th	0203	1.8	56	20 F	0151	1.4	44
	0847	5.1	154		0839	5.7	175
	1541	1.5	47		1531	1.0	29
	2115	3.5	106		2115	3.8	115
6 F	0243	1.8	54	21 Sa	0247	1.2	38
	0925	5.2	160		0930	6.0	183
	1616	1.4	42		1616	0.7	22
	2154	3.6	109		2203	4.0	121
7 Sa	0322	1.7	51	22 Su	0339	1.0	32
	1001	5.4	164		1017	6.1	187
	1649	1.2	38		1659	0.6	19
	2231	3.7	112		2247	4.1	125
8 Su	0400	1.6	48	23 M	0427	1.0	29
	1037	5.5	168		1101	6.1	186
	1722	1.1	35		1739	0.6	18
	2308	3.7	114		2330	4.2	128
9 M	0437	1.5	46	24 Tu	0514	0.9	28
	1112	5.5	169		1143	5.9	180
	1755	1.1	34		1819	0.7	21
	2345	3.8	116				
10 Tu	0516	1.5	45	25 W	0012	4.3	130
	1148	5.5	168		0601	1.0	32
	1830	1.1	34		1223	5.5	169
					1857	0.9	26
11 W	0022	3.8	117	26 Th	0054	4.3	130
	0557	1.5	45		0648	1.3	39
	1225	5.4	164		1303	5.1	154
	1906	1.1	35		1935	1.1	33
12 Th	0102	3.9	119	27 F	0138	4.2	129
	0641	1.6	48		0737	1.6	49
	1303	5.2	157		1342	4.5	138
	1943	1.2	37		2012	1.3	41
13 F	0144	4.0	122	28 Sa	0225	4.2	127
	0728	1.7	52		0830	1.9	59
	1344	4.9	148		1423	4.0	122
	2021	1.3	40		2050	1.6	49
14 Sa	0232	4.1	125	29 Su	0319	4.1	126
	0821	1.9	58		0936	2.2	68
	1428	4.5	137		1511	3.5	107
	2102	1.4	43		2132	1.9	57
15 Su	0327	4.2	129	30 M	0426	4.1	125
	0925	2.1	64		1118	2.4	73
	1520	4.1	125		1623	3.1	96
	2148	1.5	46		2226	2.0	62
				31 Tu	0540	4.2	128
					1252	2.3	69
					1807	3.0	91
					2337	2.1	65

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0644	4.4	133	16 Th	0633	4.9	150
	1357	2.0	61		1342	1.5	45
	1923	3.1	93		1926	3.3	100
2 Th	0046	2.1	64	17 F	0047	1.7	52
	0738	4.6	140		0738	5.2	160
	1442	1.7	53		1435	1.1	34
	2017	3.2	98		2023	3.5	108
3 F	0140	2.0	60	18 Sa	0150	1.4	44
	0823	4.9	148		0833	5.5	169
	1519	1.5	45		1519	0.8	25
	2059	3.4	103		2109	3.8	117
4 Sa	0225	1.8	54	19 Su	0243	1.1	35
	0903	5.1	156		0920	5.7	175
	1551	1.2	38		1557	0.7	20
	2134	3.6	109		2149	4.1	125
5 Su	0305	1.5	47	20 M	0331	0.9	28
	0939	5.3	162		1002	5.8	177
	1621	1.0	32		1633	0.6	17
	2208	3.8	115		2227	4.3	131
6 M	0343	1.3	41	21 Tu	0415	0.8	24
	1014	5.5	167		1040	5.7	174
	1652	0.9	28		1707	0.6	17
	2242	3.9	120		2304	4.5	136
7 Tu	0420	1.2	36	22 W	0458	0.8	25
	1048	5.5	169		1117	5.4	166
	1722	0.9	26		1741	0.7	21
	2316	4.1	125		2341	4.5	138
8 W	0459	1.1	33	23 Th	0541	1.0	29
	1123	5.5	167		1152	5.1	154
	1754	0.8	25		1814	0.9	26
	2352	4.3	130				
9 Th	0540	1.1	33	24 F	0019	4.6	139
	1158	5.3	162		0625	1.2	36
	1826	0.8	25		1228	4.6	140
					1846	1.1	33
10 F	0030	4.4	134	25 Sa	0058	4.5	137
	0623	1.2	36		0711	1.5	46
	1235	5.0	153		1303	4.1	125
	1900	0.9	28		1918	1.4	42
11 Sa	0111	4.5	137	26 Su	0138	4.4	134
	0711	1.4	42		0800	1.8	56
	1315	4.6	141		1341	3.6	111
	1936	1.1	33		1949	1.7	51
12 Su	0157	4.6	139	27 M	0223	4.2	129
	0805	1.6	50		0901	2.1	65
	1359	4.1	126		1426	3.2	98
	2016	1.3	39		2023	1.9	59
13 M	0251	4.6	139	28 Tu	0319	4.1	125
	0914	1.9	57		1042	2.3	70
	1456	3.6	111		1538	2.9	88
	2103	1.5	47		2111	2.2	67
14 Tu	0358	4.6	140	29 W	0442	4.0	123
	1050	2.0	61		1225	2.2	66
	1618	3.2	99		1755	2.8	86
	2208	1.8	54		2245	2.3	71
15 W	0517	4.7	143	30 Th	0604	4.1	126
	1230	1.8	55		1329	1.9	58
	1803	3.1	96		1912	3.0	90
	2331	1.9	57				
				31 F	0019	2.2	68
					0706	4.4	133
					1412	1.6	50
					2000	3.2	98

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0118	2.0	61	16 Su	0147	1.4	43
	0754	4.7	142		0817	5.2	160
	1446	1.3	41		1454	0.8	25
	2035	3.5	106		2050	4.1	124
2 Su	0204	1.7	52	17 M	0236	1.1	34
	0834	4.9	150		0900	5.3	163
	1516	1.1	34		1528	0.7	21
	2107	3.7	114		2127	4.4	133
3 M	0245	1.4	43	18 Tu	0320	0.9	28
	0910	5.2	157		0939	5.3	162
	1545	0.9	27		1600	0.7	20
	2139	4.0	123		2202	4.6	141
4 Tu	0323	1.1	35	19 W	0402	0.9	26
	0945	5.3	162		1015	5.1	156
	1613	0.7	22		1630	0.7	21
	2211	4.3	131		2237	4.8	146
5 W	0401	0.9	28	20 Th	0443	0.9	26
	1018	5.3	163		1049	4.9	148
	1642	0.6	19		1700	0.8	25
	2244	4.6	139		2312	4.9	149
6 Th	0441	0.8	25	21 F	0524	1.0	30
	1053	5.3	161		1124	4.5	137
	1712	0.6	18		1730	1.0	31
	2320	4.8	147		2346	4.9	148
7 F	0523	0.8	25	22 Sa	0606	1.2	37
	1130	5.0	153		1158	4.1	126
	1744	0.6	19		1800	1.2	38
	2359	5.0	152				
8 Sa	0608	0.9	28	23 Su	0021	4.8	145
	1209	4.7	142		0649	1.4	44
	1818	0.8	24		1234	3.7	114
					1828	1.5	47
9 Su	0041	5.1	154	24 M	0057	4.6	141
	0700	1.1	35		0736	1.7	53
	1252	4.2	128		1312	3.4	103
	1856	1.0	31		1856	1.8	55
10 M	0128	5.0	152	25 Tu	0137	4.4	135
	0759	1.4	43		0833	2.0	60
	1344	3.7	113		1400	3.1	93
	1940	1.3	41		1928	2.1	64
11 Tu	0225	4.9	148	26 W	0225	4.2	128
	0916	1.6	50		1000	2.1	65
	1453	3.3	100		1519	2.8	86
	2035	1.7	52		2015	2.3	71
12 W	0337	4.7	144	27 Th	0335	4.1	124
	1055	1.7	52		1141	2.1	63
	1635	3.0	92		1738	2.9	87
	2155	2.0	60		2153	2.5	76
13 Th	0503	4.7	143	28 F	0511	4.1	124
	1226	1.5	47		1245	1.8	56
	1819	3.1	96		1848	3.1	94
	2330	2.0	60		2348	2.4	73
14 F	0624	4.8	147	29 Sa	0624	4.2	129
	1328	1.2	38		1328	1.6	48
	1925	3.4	104		1931	3.4	103
15 Sa	0048	1.7	53	30 Su	0052	2.1	64
	0727	5.1	154		0716	4.5	137
	1415	1.0	30		1402	1.3	40
	2011	3.7	114		2004	3.7	113

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0140	1.8	54	16	0226	1.3	39
M	0758	4.7	144	Tu	0835	4.8	146
	1432	1.1	33		1451	0.9	28
	2034	4.1	124		2102	4.8	145
2	0222	1.4	43	17	0311	1.1	35
Tu	0835	4.9	150	W	0914	4.7	143
	1501	0.9	27		1522	0.9	28
	2106	4.4	135		2136	5.0	152
3	0302	1.1	34	18	0352	1.0	32
W	0911	5.0	153	Th	0950	4.5	138
	1530	0.7	22		1551	1.0	31
	2138	4.8	147		2211	5.2	157
4	0343	0.9	26	19	0433	1.0	32
Th	0948	5.0	153	F	1026	4.3	131
	1600	0.6	19		1621	1.1	35
	2214	5.2	158		2244	5.2	158
5	0425	0.7	22	20	0512	1.1	35
F	1026	4.9	149	Sa	1101	4.0	123
	1632	0.6	18		1651	1.3	40
	2251	5.4	166		2317	5.2	157
6	0511	0.7	21	21	0552	1.3	39
Sa	1107	4.6	141	Su	1137	3.8	116
	1707	0.7	21		1720	1.5	47
	2333	5.6	170		2351	5.1	154
7	0601	0.8	24	22	0633	1.4	44
Su	1152	4.3	131	M	1215	3.5	108
	1745	0.9	27		1750	1.8	54
8	0018	5.6	170	23	0025	4.9	149
M	0657	1.0	29	Tu	0717	1.6	50
	1243	3.9	118		1256	3.3	101
	1828	1.2	36		1820	2.0	61
9	0109	5.4	165	24	0103	4.7	143
Tu	0801	1.2	37	W	0809	1.8	56
	1345	3.5	107		1347	3.1	95
	1921	1.5	47		1857	2.2	68
10	0210	5.2	157	25	0148	4.5	137
W	0918	1.4	43	Th	0915	2.0	60
	1504	3.2	99		1503	3.0	91
	2028	1.9	57		1950	2.4	74
11	0323	4.9	149	26	0247	4.3	131
Th	1044	1.4	44	F	1036	2.0	60
	1644	3.2	98		1649	3.1	93
	2156	2.1	63		2114	2.6	78
12	0446	4.8	145	27	0406	4.2	128
F	1200	1.3	41	Sa	1143	1.8	56
	1809	3.4	105		1801	3.3	100
	2326	2.0	61		2300	2.5	77
13	0603	4.8	145	28	0525	4.2	129
Sa	1257	1.2	37	Su	1230	1.7	51
	1905	3.7	114		1846	3.6	111
14	0040	1.8	54	29	0015	2.3	70
Su	0704	4.8	147	M	0625	4.4	133
	1341	1.0	32		1307	1.4	44
	1948	4.1	125		1922	4.0	122
15	0138	1.5	46	30	0109	1.9	59
M	0753	4.9	148	Tu	0713	4.5	137
	1418	1.0	29		1340	1.2	38
	2026	4.4	135		1956	4.5	136
				31	0156	1.6	49
				W	0756	4.6	140
					1412	1.0	32
					2030	4.9	149

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0242	1.3	39	16	0348	1.3	41
Th	0837	4.6	141	F	0932	4.0	122
	1445	0.9	28		1518	1.4	43
	2106	5.3	163		2149	5.4	164
2	0327	1.0	30	17	0428	1.3	39
F	0920	4.6	140	Sa	1010	3.9	119
	1520	0.8	25		1550	1.5	46
	2146	5.7	175		2224	5.4	166
3	0415	0.8	24	18	0506	1.3	40
Sa	1004	4.5	136	Su	1048	3.8	116
	1558	0.8	25		1622	1.6	49
	2228	6.0	183		2257	5.4	165
4	0505	0.7	21	19	0543	1.3	41
Su	1052	4.3	131	M	1126	3.7	112
	1639	0.9	28		1655	1.8	54
	2314	6.1	185		2331	5.3	162
5	0558	0.7	22	20	0621	1.4	44
M	1144	4.1	124	Tu	1205	3.6	109
	1724	1.1	34		1728	1.9	58
6	0003	6.0	183	21	0005	5.2	158
Tu	0656	0.9	26	W	0702	1.5	47
	1242	3.8	117		1247	3.4	105
	1815	1.4	42		1804	2.1	63
7	0058	5.8	176	22	0043	5.0	153
W	0758	1.0	31	Th	0746	1.7	51
	1347	3.6	111		1335	3.3	102
	1916	1.7	51		1846	2.2	68
8	0158	5.4	166	23	0126	4.8	147
Th	0904	1.2	36	F	0836	1.8	54
	1501	3.5	108		1433	3.3	101
	2026	1.9	58		1938	2.4	73
9	0305	5.1	156	24	0215	4.6	141
F	1014	1.3	40	Sa	0932	1.8	56
	1623	3.6	109		1543	3.4	103
	2145	2.1	63		2043	2.5	77
10	0418	4.8	147	25	0314	4.4	135
Sa	1119	1.3	41	Su	1029	1.8	55
	1737	3.8	116		1653	3.6	109
	2308	2.1	64		2203	2.6	78
11	0530	4.6	141	26	0419	4.3	131
Su	1214	1.3	40	M	1120	1.7	53
	1834	4.1	125		1749	3.9	119
					2326	2.4	74
12	0024	2.0	60	27	0525	4.2	129
M	0632	4.5	136	Tu	1204	1.6	49
	1259	1.3	40		1834	4.3	131
	1920	4.4	135				
13	0126	1.8	54	28	0034	2.2	67
Tu	0724	4.4	133	W	0622	4.2	129
	1338	1.3	39		1244	1.5	45
	2000	4.8	145		1915	4.8	145
14	0218	1.6	49	29	0132	1.9	57
W	0810	4.2	129	Th	0716	4.2	128
	1413	1.3	39		1323	1.3	41
	2038	5.1	154		1956	5.2	160
15	0306	1.4	44	30	0225	1.5	46
Th	0852	4.1	126	F	0807	4.2	128
	1445	1.3	40		1404	1.2	37
	2114	5.2	160		2039	5.7	174

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0317	1.2	36	16	0424	1.4	44
Sa	0900	4.2	127	Su	1001	3.7	113
	1448	1.1	35		1531	1.7	53
	2125	6.1	185		2210	5.5	168
2	0409	0.9	27	17	0459	1.3	41
Su	0952	4.2	127	M	1039	3.7	114
	1534	1.1	34		1606	1.7	53
	2213	6.3	192		2245	5.5	169
3	0500	0.7	22	18	0533	1.3	41
M	1045	4.1	126	Tu	1116	3.7	114
	1622	1.1	34		1641	1.8	54
	2302	6.4	195		2318	5.5	168
4	0553	0.7	21	19	0607	1.3	41
Tu	1139	4.1	124	W	1153	3.7	113
	1714	1.2	37		1718	1.8	55
	2353	6.3	192		2353	5.4	166
5	0646	0.8	23	20	0643	1.4	43
W	1235	4.0	122	Th	1232	3.7	113
	1809	1.4	42		1756	1.9	57
6	0046	6.0	184	21	0029	5.3	162
Th	0740	0.9	27	F	0720	1.5	45
	1333	3.9	120		1313	3.7	112
	1908	1.6	48		1837	2.0	61
7	0140	5.7	173	22	0107	5.1	156
F	0835	1.1	33	Sa	0800	1.5	47
	1434	3.9	119		1358	3.7	113
	2010	1.8	55		1924	2.1	65
8	0236	5.2	159	23	0148	4.9	149
Sa	0930	1.3	39	Su	0841	1.6	50
	1541	3.9	120		1449	3.8	115
	2117	2.0	62		2017	2.3	70
9	0336	4.8	145	24	0233	4.6	140
Su	1026	1.4	44	M	0924	1.7	52
	1652	4.1	124		1546	3.9	119
	2235	2.2	67		2120	2.4	74
10	0442	4.4	133	25	0326	4.3	132
M	1120	1.5	47	Tu	1011	1.7	53
	1755	4.3	131		1647	4.2	127
					2241	2.5	75
11	0000	2.2	68	26	0428	4.1	124
Tu	0551	4.0	123	W	1100	1.7	53
	1210	1.6	49		1745	4.5	137
	1848	4.6	140				
12	0113	2.1	64	27	0004	2.3	71
W	0653	3.8	117	Th	0538	3.9	118
	1255	1.7	51		1151	1.7	51
	1934	4.9	148		1838	4.9	150
13	0212	1.9	58	28	0116	2.0	62
Th	0748	3.7	114	F	0647	3.8	115
	1337	1.7	51		1243	1.6	49
	2017	5.1	156		1930	5.3	163
14	0302	1.7	52	29	0219	1.6	50
F	0837	3.7	112	Sa	0752	3.8	115
	1417	1.7	52		1336	1.5	46
	2057	5.3	162		2023	5.8	176
15	0345	1.5	47	30	0314	1.2	38
Sa	0921	3.7	113	Su	0853	3.9	118
	1455	1.7	52		1430	1.4	42
	2134	5.4	166		2115	6.1	187
				31	0405	0.9	28
				M	0948	4.0	122
					1523	1.2	37
					2205	6.4	194

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

ANTOFAGASTA, CHILE, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0642	1.1	35	16 Tu	0041	4.4	135
	1232	3.2	97		0726	1.1	35
	1805	1.6	48		1338	3.6	109
					1918	1.9	57
2 Tu	0039	4.6	139	17 W	0121	4.0	123
	0722	1.2	36		0803	1.3	41
	1322	3.3	100		1430	3.6	110
	1859	1.7	53		2017	2.1	64
3 W	0123	4.3	131	18 Th	0203	3.6	110
	0804	1.2	38		0840	1.5	47
	1419	3.4	104		1524	3.7	112
	2004	1.9	59		2129	2.3	69
4 Th	0211	4.0	121	19 F	0250	3.2	99
	0849	1.3	40		0918	1.7	52
	1522	3.6	110		1620	3.8	115
	2126	2.1	63		2254	2.3	71
5 F	0308	3.6	110	20 Sa	0352	3.0	90
	0938	1.4	42		1004	1.8	56
	1629	3.9	119		1717	3.9	119
	2256	2.0	62				
6 Sa	0417	3.3	101	21 Su	0014	2.2	68
	1032	1.4	43		0510	2.8	85
	1733	4.3	130		1100	1.9	58
					1811	4.1	125
7 Su	0021	1.8	56	22 M	0119	2.0	62
	0537	3.1	95		0630	2.8	85
	1129	1.4	43		1158	1.9	58
	1831	4.6	141		1859	4.3	132
8 M	0131	1.6	48	23 Tu	0206	1.8	55
	0651	3.1	94		0730	2.9	87
	1227	1.3	41		1250	1.8	55
	1925	5.0	151		1942	4.5	138
9 Tu	0227	1.3	39	24 W	0243	1.6	48
	0753	3.1	96		0814	3.0	91
	1323	1.3	39		1337	1.7	52
	2015	5.2	158		2022	4.8	145
10 W	0316	1.0	32	25 Th	0317	1.4	43
	0847	3.2	99		0852	3.1	95
	1418	1.2	36		1419	1.5	47
	2104	5.3	163		2100	4.9	150
11 Th	0402	0.9	27	26 F	0350	1.2	38
	0936	3.4	103		0927	3.2	99
	1509	1.1	33		1500	1.4	43
	2151	5.3	163		2138	5.1	154
12 F	0445	0.8	25	27 Sa	0422	1.1	34
	1023	3.5	106		1002	3.4	103
	1559	1.1	33		1540	1.3	39
	2236	5.3	161		2216	5.1	155
13 Sa	0526	0.8	25	28 Su	0455	1.0	32
	1110	3.5	108		1039	3.5	108
	1647	1.2	36		1622	1.2	37
	2319	5.1	155		2255	5.1	154
14 Su	0607	0.9	27	29 M	0528	1.0	30
	1158	3.5	108		1118	3.7	112
	1735	1.3	41		1705	1.2	38
					2333	4.9	149
15 M	0001	4.8	146	30 Tu	0602	1.0	31
	0647	1.0	31		1201	3.8	115
	1247	3.6	109		1753	1.4	42
	1824	1.6	49				
				31 W	0013	4.6	140
					0639	1.1	33
					1248	3.9	118
					1848	1.6	49

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0055	4.2	128	16 F	0110	3.4	104
	0718	1.2	36		0727	1.7	52
	1342	4.0	121		1414	3.8	117
	1955	1.8	56		2037	2.2	68
2 F	0144	3.8	115	17 Sa	0148	3.1	93
	0802	1.3	41		0802	1.9	58
	1445	4.1	124		1509	3.8	116
	2119	2.0	61		2202	2.3	71
3 Sa	0246	3.3	101	18 Su	0251	2.8	85
	0854	1.5	46		0850	2.1	63
	1556	4.2	128		1614	3.8	117
	2256	2.0	61		2338	2.3	69
4 Su	0408	3.0	91	19 M	0434	2.7	81
	0959	1.6	50		1002	2.2	66
	1711	4.4	134		1722	3.9	120
5 M	0026	1.8	54	20 Tu	0053	2.1	63
	0541	2.9	89		0618	2.7	82
	1112	1.7	51		1125	2.1	65
	1818	4.6	141		1823	4.2	127
6 Tu	0130	1.5	46	21 W	0139	1.8	55
	0656	3.0	92		0717	2.9	88
	1221	1.6	48		1228	2.0	60
	1917	4.9	148		1912	4.4	134
7 W	0221	1.3	39	22 Th	0213	1.6	48
	0753	3.2	98		0754	3.1	94
	1322	1.4	43		1317	1.8	54
	2008	5.1	154		1954	4.7	142
8 Th	0304	1.1	33	23 F	0243	1.4	42
	0840	3.4	104		0826	3.3	101
	1415	1.2	38		1400	1.5	47
	2055	5.2	157		2033	4.9	148
9 F	0343	1.0	29	24 Sa	0313	1.2	36
	0923	3.6	110		0859	3.5	108
	1503	1.1	34		1441	1.3	40
	2137	5.2	158		2111	5.0	152
10 Sa	0420	0.9	28	25 Su	0343	1.0	32
	1004	3.8	115		0932	3.8	116
	1548	1.1	34		1522	1.1	35
	2217	5.1	155		2148	5.0	153
11 Su	0455	0.9	28	26 M	0413	1.0	29
	1045	3.9	118		1009	4.0	123
	1632	1.2	36		1605	1.0	32
	2254	4.9	148		2227	4.9	150
12 M	0528	1.0	30	27 Tu	0446	0.9	27
	1125	3.9	119		1049	4.3	130
	1715	1.3	41		1652	1.1	33
	2329	4.6	139		2306	4.7	143
13 Tu	0559	1.1	34	28 W	0520	0.9	27
	1205	3.9	120		1133	4.4	135
	1759	1.6	48		1744	1.2	37
					2348	4.3	132
14 W	0003	4.2	127				
	0629	1.3	39				
	1246	3.9	119				
	1845	1.8	55				
15 Th	0036	3.8	115				
	0658	1.5	45				
	1327	3.9	118				
	1936	2.0	62				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0557	1.0	30	16 F	0000	3.4	105
	1221	4.5	137		0600	1.6	48
	1844	1.4	44		1236	4.1	125
					1907	1.9	57
2 F	0035	3.9	118	17 Sa	0033	3.1	96
	0638	1.1	35		0626	1.8	54
	1315	4.5	136		1318	4.0	122
	1956	1.7	51		2003	2.0	62
3 Sa	0131	3.4	103	18 Su	0112	2.9	87
	0726	1.4	43		0655	2.0	60
	1419	4.4	134		1411	3.9	118
	2121	1.8	55		2124	2.1	65
4 Su	0246	3.0	92	19 M	0223	2.6	80
	0827	1.7	51		0741	2.1	65
	1534	4.4	133		1518	3.8	116
	2258	1.8	54		2259	2.1	64
5 M	0422	2.8	86	20 Tu	0421	2.6	78
	0947	1.8	55		0909	2.3	69
	1654	4.4	134		1631	3.8	117
6 Tu	0017	1.6	49	21 W	0011	1.9	59
	0552	2.9	89		0608	2.7	82
	1110	1.8	55		1051	2.2	68
	1806	4.5	137		1738	4.0	122
7 W	0115	1.4	43	22 Th	0055	1.7	53
	0658	3.1	96		0653	2.9	89
	1221	1.6	50		1200	2.1	63
	1905	4.7	142		1833	4.2	129
8 Th	0201	1.2	37	23 F	0128	1.5	46
	0746	3.4	103		0724	3.2	98
	1319	1.4	44		1251	1.8	55
	1955	4.8	146		1917	4.5	136
9 F	0239	1.1	33	24 Sa	0157	1.3	40
	0827	3.6	111		0754	3.5	107
	1408	1.3	39		1335	1.5	46
	2037	4.8	147		1958	4.6	141
10 Sa	0313	1.0	30	25 Su	0227	1.1	34
	0905	3.9	118		0827	3.9	118
	1452	1.2	36		1419	1.3	39
	2115	4.8	146		2038	4.7	144
11 Su	0345	1.0	29	26 M	0258	1.0	29
	0941	4.1	124		0903	4.2	129
	1535	1.2	36		1504	1.1	33
	2150	4.7	142		2118	4.7	143
12 M	0414	1.0	30	27 Tu	0330	0.8	25
	1016	4.2	128		0942	4.6	139
	1616	1.2	37		1553	1.0	30
	2224	4.4	134		2200	4.5	138
13 Tu	0442	1.0	32	28 W	0405	0.8	23
	1051	4.3	130		1025	4.8	147
	1656	1.3	41		1645	1.0	30
	2257	4.1	125		2244	4.2	129
14 W	0508	1.2	37	29 Th	0443	0.8	24
	1125	4.3	130		1111	5.0	151
	1737	1.5	46		1743	1.1	33
	2329	3.8	115		2331	3.8	117
15 Th	0534	1.4	42	30 F	0523	1.0	29
	1159	4.2	128		1201	4.9	150
	1820	1.7	51		1847	1.2	38
				31 Sa	0026	3.4	105
					0609	1.2	37
					1256	4.8	146
					1958	1.4	43

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0133	3.1	94	16 M	0101	2.7	82
	0705	1.5	46		0614	1.9	59
	1401	4.6	140		1331	4.0	122
	2120	1.5	46		2050	1.9	57
2 M	0258	2.9	87	17 Tu	0219	2.5	77
	0817	1.7	53		0703	2.1	65
	1516	4.4	134		1431	3.9	119
	2245	1.5	45		2207	1.9	57
3 Tu	0429	2.9	87	18 W	0355	2.6	78
	0941	1.9	57		0829	2.2	68
	1633	4.3	131		1538	3.9	118
	2353	1.4	42		2309	1.7	53
4 W	0548	3.1	93	19 Th	0521	2.7	83
	1104	1.8	56		1005	2.2	68
	1742	4.3	131		1644	3.9	120
					2355	1.6	49
5 Th	0046	1.3	39	20 F	0608	3.0	92
	0644	3.3	101		1122	2.1	63
	1212	1.7	52		1742	4.1	124
	1841	4.4	133				
6 F	0127	1.2	36	21 Sa	0032	1.4	43
	0728	3.6	110		0644	3.4	103
	1307	1.5	47		1219	1.8	55
	1928	4.4	133		1833	4.2	128
7 Sa	0202	1.1	33	22 Su	0105	1.2	37
	0806	3.9	118		0719	3.8	115
	1355	1.4	42		1311	1.5	47
	2009	4.3	132		1920	4.3	130
8 Su	0234	1.0	31	23 M	0139	1.0	31
	0841	4.1	126		0757	4.2	129
	1440	1.3	40		1401	1.3	39
	2046	4.2	129		2005	4.3	130
9 M	0303	1.0	31	24 Tu	0214	0.9	27
	0915	4.3	132		0837	4.7	142
	1522	1.2	38		1454	1.1	33
	2122	4.1	124		2051	4.2	127
10 Tu	0330	1.0	32	25 W	0251	0.8	24
	0947	4.5	136		0920	5.0	152
	1602	1.3	39		1548	1.0	29
	2156	3.9	118		2139	4.0	121
11 W	0357	1.1	35	26 Th	0331	0.8	23
	1020	4.5	138		1006	5.2	159
	1641	1.3	40		1645	0.9	28
	2229	3.6	110		2229	3.7	113
12 Th	0422	1.3	39	27 F	0414	0.9	26
	1052	4.5	137		1054	5.3	161
	1721	1.4	43		1744	0.9	28
	2302	3.3	102		2324	3.4	104
13 F	0448	1.4	44	28 Sa	0500	1.0	31
	1126	4.4	135		1146	5.2	158
	1802	1.5	47		1846	1.0	31
	2336	3.1	95				
14 Sa	0515	1.6	49	29 Su	0024	3.2	97
	1202	4.3	131		0553	1.2	38
	1848	1.7	51		1242	5.0	151
					1952	1.1	35
15 Su	0014	2.9	88	30 M	0134	3.0	91
	0542	1.8	54		0655	1.5	46
	1242	4.1	126		1344	4.7	143
	1941	1.8	55		2105	1.2	37

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0253	2.9	89	16 W	0158	2.6	80
	0808	1.7	53		0656	2.0	60
	1452	4.4	135		1356	4.1	124
	2215	1.2	38		2109	1.6	48
2 W	0411	3.0	92	17 Th	0307	2.7	82
	0927	1.8	56		0805	2.1	64
	1600	4.2	129		1452	4.0	121
	2315	1.2	38		2203	1.5	47
3 Th	0522	3.2	98	18 F	0416	2.9	88
	1046	1.9	57		0924	2.1	65
	1704	4.1	124		1550	3.9	119
					2251	1.4	44
4 F	0004	1.2	37	19 Sa	0514	3.2	97
	0617	3.5	107		1043	2.0	62
	1154	1.8	54		1650	3.9	118
	1802	4.0	121		2334	1.3	40
5 Sa	0044	1.1	35	20 Su	0602	3.6	109
	0702	3.8	116		1152	1.9	57
	1252	1.7	51		1748	3.9	118
	1853	3.9	118				
6 Su	0119	1.1	35	21 M	0014	1.2	36
	0740	4.1	125		0646	4.1	124
	1343	1.5	47		1254	1.6	49
	1938	3.8	115		1844	3.8	116
7 M	0151	1.1	35	22 Tu	0054	1.0	32
	0815	4.4	133		0730	4.5	138
	1430	1.4	44		1354	1.4	42
	2019	3.7	112		1939	3.7	114
8 Tu	0221	1.2	36	23 W	0135	0.9	28
	0848	4.5	138		0815	5.0	151
	1512	1.4	42		1452	1.1	34
	2057	3.5	107		2033	3.6	110
9 W	0249	1.2	38	24 Th	0219	0.9	26
	0921	4.6	141		0902	5.2	160
	1552	1.3	40		1549	1.0	29
	2134	3.4	103		2126	3.5	107
10 Th	0317	1.3	40	25 F	0306	0.9	26
	0954	4.7	142		0951	5.4	165
	1631	1.3	41		1644	0.8	25
	2209	3.2	98		2221	3.4	103
11 F	0346	1.4	42	26 Sa	0355	0.9	28
	1027	4.6	141		1041	5.4	166
	1710	1.4	42		1739	0.8	24
	2245	3.1	93		2316	3.3	100
12 Sa	0415	1.5	45	27 Su	0448	1.0	31
	1103	4.6	139		1133	5.3	161
	1750	1.4	43		1834	0.8	25
	2322	2.9	88				
13 Su	0447	1.6	48	28 M	0015	3.2	98
	1140	4.5	136		0544	1.2	36
	1833	1.5	45		1227	5.1	154
					1932	0.9	28
14 M	0005	2.8	84	29 Tu	0119	3.1	96
	0521	1.7	52		0644	1.4	43
	1221	4.3	132		1323	4.8	145
	1921	1.5	47		2032	1.0	31
15 Tu	0056	2.7	82	30 W	0227	3.1	96
	0603	1.8	56		0750	1.6	50
	1306	4.2	128		1420	4.4	135
	2013	1.6	48		2131	1.1	34
				31 Th	0335	3.2	99
					0901	1.8	55
					1518	4.1	125
					2225	1.2	36

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0441	3.4	104	16 Sa	0319	3.1	96
	1019	1.9	59		0854	2.0	62
	1616	3.8	116		1505	3.8	117
	2312	1.2	37		2150	1.3	41
2 Sa	0540	3.7	112	17 Su	0422	3.4	105
	1132	1.9	59		1016	2.1	63
	1715	3.6	109		1604	3.6	110
	2354	1.3	39		2238	1.3	40
3 Su	0629	4.0	121	18 M	0522	3.8	116
	1236	1.8	56		1136	1.9	59
	1814	3.4	103		1710	3.4	105
					2326	1.2	38
4 M	0032	1.3	40	19 Tu	0616	4.3	130
	0710	4.2	128		1250	1.7	52
	1332	1.7	52		1819	3.3	101
	1908	3.3	100				
5 Tu	0107	1.3	41	20 W	0016	1.2	36
	0748	4.4	135		0708	4.7	143
	1421	1.6	48		1356	1.4	43
	1956	3.2	97		1924	3.2	99
6 W	0141	1.4	42	21 Th	0107	1.1	33
	0823	4.6	139		0759	5.1	154
	1504	1.5	45		1454	1.1	34
	2038	3.1	95		2023	3.2	99
7 Th	0214	1.4	43	22 F	0200	1.0	30
	0858	4.7	142		0849	5.3	162
	1544	1.4	42		1546	0.9	27
	2116	3.1	93		2118	3.3	101
8 F	0247	1.4	43	23 Sa	0253	0.9	28
	0933	4.7	143		0939	5.4	166
	1621	1.3	41		1636	0.8	23
	2153	3.0	91		2211	3.3	102
9 Sa	0321	1.4	44	24 Su	0346	0.9	27
	1008	4.7	144		1029	5.4	166
	1658	1.3	40		1724	0.7	21
	2230	3.0	90		2303	3.4	103
10 Su	0356	1.4	44	25 M	0439	1.0	29
	1045	4.7	143		1118	5.3	161
	1735	1.3	39		1812	0.7	22
	2309	2.9	88		2357	3.4	103
11 M	0434	1.5	45	26 Tu	0532	1.1	33
	1124	4.6	141		1207	5.1	154
	1814	1.3	39		1901	0.8	24
	2351	2.9	88				
12 Tu	0514	1.5	47	27 W	0053	3.4	104
	1203	4.5	138		0627	1.3	39
	1854	1.3	39		1255	4.7	144
					1949	0.9	28
13 W	0036	2.9	88	28 Th	0151	3.4	104
	0557	1.6	50		0725	1.5	47
	1244	4.4	134		1343	4.3	132
	1936	1.3	40		2037	1.0	32
14 Th	0125	2.9	88	29 F	0251	3.5	106
	0647	1.8	54		0830	1.8	55
	1327	4.2	129		1432	3.9	119
	2019	1.3	41		2123	1.2	37
15 F	0220	3.0	91	30 Sa	0351	3.6	109
	0744	1.9	59		0944	2.0	61
	1413	4.0	123		1525	3.5	107
	2104	1.3	41		2209	1.3	41

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

ANTOFAGASTA, CHILE, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0451	3.7	114	16 M	0339	3.7	113
	1102	2.0	62		1003	2.0	62
	1624	3.2	97		1531	3.2	99
	2254	1.5	45		2149	1.4	42
2 M	0546	3.9	120	17 Tu	0449	4.0	122
	1215	2.0	60		1137	1.9	58
	1731	3.0	91		1652	3.0	91
	2339	1.6	48		2250	1.4	42
3 Tu	0635	4.1	126	18 W	0555	4.3	132
	1319	1.8	56		1257	1.6	50
	1839	2.9	88		1814	2.9	89
					2354	1.3	40
4 W	0024	1.6	48	19 Th	0654	4.7	143
	0718	4.3	131		1359	1.3	40
	1410	1.7	51		1922	3.0	92
	1934	2.9	88				
5 Th	0107	1.6	48	20 F	0056	1.2	37
	0758	4.5	136		0749	5.0	152
	1452	1.5	46		1450	1.0	32
	2019	2.9	89		2019	3.1	96
6 F	0148	1.5	46	21 Sa	0154	1.0	32
	0836	4.6	141		0840	5.2	159
	1529	1.4	42		1537	0.8	25
	2058	3.0	90		2110	3.3	102
7 Sa	0227	1.4	44	22 Su	0248	0.9	27
	0913	4.7	144		0929	5.3	162
	1603	1.2	38		1620	0.7	21
	2135	3.0	92		2158	3.5	106
8 Su	0305	1.3	41	23 M	0338	0.8	25
	0949	4.8	146		1015	5.3	161
	1637	1.1	35		1702	0.7	20
	2211	3.1	93		2245	3.6	109
9 M	0343	1.3	40	24 Tu	0427	0.9	26
	1026	4.8	147		1059	5.1	156
	1711	1.1	34		1742	0.7	21
	2248	3.1	95		2332	3.6	111
10 Tu	0422	1.3	39	25 W	0516	1.0	30
	1103	4.8	146		1141	4.9	148
	1745	1.1	33		1822	0.8	23
	2326	3.1	96				
11 W	0502	1.3	40	26 Th	0021	3.7	112
	1140	4.7	143		0605	1.2	38
	1819	1.1	33		1222	4.5	137
					1900	0.9	28
12 Th	0006	3.2	98	27 F	0110	3.7	112
	0545	1.4	43		0658	1.5	46
	1218	4.5	137		1303	4.0	123
	1855	1.1	34		1938	1.1	34
13 F	0049	3.3	100	28 Sa	0202	3.7	112
	0631	1.6	48		0756	1.8	54
	1256	4.3	130		1346	3.6	109
	1932	1.1	35		2016	1.3	40
14 Sa	0138	3.4	103	29 Su	0255	3.7	112
	0726	1.8	54		0904	2.0	61
	1338	3.9	120		1434	3.2	97
	2012	1.2	38		2056	1.5	47
15 Su	0234	3.5	107	30 M	0352	3.7	113
	0836	1.9	59		1026	2.1	64
	1428	3.6	109		1534	2.9	87
	2057	1.3	40		2145	1.7	52
				31 Tu	0453	3.8	115
					1150	2.0	62
					1651	2.7	81
					2245	1.8	54

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0554	3.9	119	16 Th	0543	4.3	131
	1303	1.9	58		1259	1.4	44
	1817	2.6	80		1824	2.8	85
	2347	1.8	54		2351	1.4	43
2 Th	0648	4.1	125	17 F	0647	4.6	139
	1353	1.7	51		1352	1.1	35
	1919	2.7	83		1925	3.0	92
3 F	0042	1.7	51	18 Sa	0056	1.2	37
	0733	4.3	131		0742	4.8	146
	1431	1.5	45		1437	1.0	29
	2003	2.9	87		2014	3.2	99
4 Sa	0128	1.5	47	19 Su	0151	1.0	30
	0812	4.5	137		0830	5.0	151
	1504	1.3	40		1517	0.8	24
	2038	3.0	92		2058	3.5	107
5 Su	0210	1.4	42	20 M	0241	0.9	26
	0849	4.7	142		0914	5.0	153
	1535	1.1	35		1554	0.7	20
	2112	3.1	96		2140	3.7	113
6 M	0249	1.2	38	21 Tu	0327	0.8	24
	0925	4.8	146		0955	5.0	151
	1605	1.0	31		1630	0.6	19
	2145	3.3	100		2222	3.8	117
7 Tu	0326	1.1	34	22 W	0412	0.8	25
	1001	4.8	147		1033	4.8	145
	1635	1.0	29		1703	0.7	21
	2219	3.4	104		2303	3.9	119
8 W	0405	1.0	32	23 Th	0457	1.0	30
	1036	4.8	146		1111	4.4	135
	1705	0.9	27		1736	0.8	24
	2255	3.6	109		2344	3.9	120
9 Th	0445	1.1	33	24 F	0543	1.2	36
	1112	4.7	142		1147	4.1	124
	1737	0.9	27		1808	1.0	30
	2333	3.7	112				
10 F	0528	1.2	36	25 Sa	0026	3.9	119
	1148	4.4	134		0631	1.4	43
	1810	0.9	28		1224	3.6	111
					1839	1.2	37
11 Sa	0016	3.8	115	26 Su	0110	3.8	117
	0617	1.3	41		0724	1.7	51
	1227	4.0	123		1303	3.2	98
	1845	1.0	31		1912	1.4	44
12 Su	0104	3.8	117	27 M	0158	3.7	114
	0717	1.6	48		0827	1.9	57
	1311	3.6	111		1348	2.9	87
	1926	1.1	35		1950	1.7	51
13 M	0201	3.9	119	28 Tu	0253	3.6	111
	0833	1.8	54		0949	2.0	61
	1407	3.2	97		1455	2.6	79
	2015	1.3	40		2041	1.9	57
14 Tu	0311	4.0	121	29 W	0359	3.6	110
	1007	1.8	56		1122	2.0	60
	1525	2.9	87		1630	2.5	75
	2119	1.5	45		2158	2.0	60
15 W	0429	4.1	125	30 Th	0510	3.7	113
	1146	1.7	52		1240	1.8	55
	1702	2.7	83		1816	2.5	77
	2236	1.5	46		2321	1.9	59
				31 F	0613	3.9	118
					1326	1.6	49
					1909	2.7	82

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0021	1.8	54	16 Su	0053	1.2	37
	0702	4.1	125		0728	4.5	137
	1359	1.4	42		1411	0.9	26
	1943	2.9	89		2002	3.5	106
2 Su	0109	1.6	48	17 M	0145	1.0	31
	0743	4.3	131		0812	4.6	140
	1427	1.2	37		1446	0.8	23
	2014	3.1	96		2041	3.8	115
3 M	0149	1.3	41	18 Tu	0231	0.9	27
	0819	4.5	137		0852	4.6	139
	1455	1.0	32		1519	0.7	21
	2043	3.4	103		2118	4.0	122
4 Tu	0227	1.1	35	19 W	0315	0.8	25
	0855	4.6	140		0929	4.4	135
	1522	0.9	28		1550	0.7	21
	2114	3.6	110		2155	4.2	127
5 W	0306	1.0	30	20 Th	0358	0.9	26
	0930	4.6	141		1005	4.2	128
	1551	0.8	24		1619	0.8	23
	2148	3.8	117		2231	4.2	129
6 Th	0346	0.9	27	21 F	0441	1.0	29
	1006	4.6	139		1041	3.9	119
	1620	0.8	23		1648	0.9	27
	2224	4.1	124		2308	4.2	129
7 F	0429	0.9	27	22 Sa	0524	1.1	34
	1043	4.4	133		1116	3.5	108
	1652	0.7	22		1717	1.1	33
	2304	4.2	129		2344	4.1	126
8 Sa	0517	1.0	30	23 Su	0609	1.3	40
	1122	4.0	123		1152	3.2	98
	1727	0.8	24		1745	1.3	40
	2349	4.3	131				
9 Su	0613	1.1	35	24 M	0023	4.0	122
	1206	3.6	111		0658	1.5	46
	1806	1.0	29		1231	2.9	88
					1815	1.5	47
10 M	0039	4.3	130	25 Tu	0107	3.8	117
	0719	1.4	42		0757	1.7	52
	1259	3.2	97		1319	2.6	79
	1852	1.2	36		1848	1.8	54
11 Tu	0140	4.2	128	26 W	0200	3.7	112
	0840	1.5	47		0915	1.8	56
	1410	2.8	86		1436	2.4	73
	1951	1.4	43		1939	2.0	60
12 W	0253	4.1	125	27 Th	0305	3.5	108
	1017	1.5	47		1044	1.8	55
	1546	2.6	80		1629	2.4	72
	2111	1.6	48		2109	2.1	64
13 Th	0416	4.1	125	28 F	0418	3.5	108
	1143	1.4	43		1154	1.7	51
	1719	2.7	82		1803	2.5	77
	2237	1.6	49		2249	2.1	63
14 F	0532	4.2	128	29 Sa	0525	3.7	112
	1245	1.2	37		1238	1.5	46
	1830	2.9	89		1845	2.8	84
	2353	1.4	44		2354	1.9	57
15 Sa	0636	4.4	133	30 Su	0619	3.8	117
	1332	1.0	31		1310	1.3	40
	1920	3.2	97		1914	3.1	93

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0042	1.6	50	16	0136	1.1	35
M	0703	4.0	123	Tu	0746	4.1	124
	1338	1.1	35		1408	0.8	24
	1941	3.3	102		2019	4.1	125
2	0125	1.4	42	17	0222	1.0	32
Tu	0742	4.2	128	W	0826	4.0	121
	1406	1.0	29		1439	0.8	24
	2011	3.7	112		2055	4.3	132
3	0205	1.1	35	18	0307	1.0	29
W	0820	4.3	130	Th	0904	3.8	117
	1435	0.8	25		1509	0.8	25
	2043	4.0	123		2129	4.5	136
4	0247	1.0	29	19	0349	1.0	29
Th	0858	4.3	130	F	0941	3.6	111
	1505	0.7	22		1537	1.0	29
	2119	4.3	132		2203	4.5	137
5	0333	0.8	25	20	0430	1.0	31
F	0937	4.1	126	Sa	1018	3.4	103
	1538	0.7	20		1605	1.1	33
	2159	4.6	140		2237	4.5	136
6	0422	0.8	24	21	0511	1.1	34
Sa	1020	3.9	118	Su	1054	3.1	96
	1614	0.7	21		1633	1.2	38
	2242	4.7	144		2312	4.3	132
7	0516	0.9	26	22	0553	1.2	38
Su	1106	3.5	108	M	1131	2.9	88
	1654	0.8	24		1701	1.4	44
	2330	4.8	145		2349	4.2	127
8	0616	1.0	29	23	0638	1.4	43
M	1159	3.2	98	Tu	1212	2.7	81
	1739	1.0	30		1731	1.6	50
9	0023	4.6	141	24	0029	4.0	122
Tu	0725	1.1	34	W	0731	1.5	47
	1303	2.9	88		1304	2.5	76
	1833	1.2	38		1804	1.8	55
10	0125	4.4	135	25	0117	3.8	116
W	0843	1.2	37	Th	0835	1.6	49
	1426	2.7	82		1418	2.4	73
	1944	1.5	46		1855	2.0	61
11	0239	4.2	128	26	0214	3.7	112
Th	1009	1.2	38	F	0945	1.6	49
	1557	2.7	82		1553	2.4	74
	2109	1.7	51		2019	2.1	65
12	0357	4.1	125	27	0318	3.6	109
F	1120	1.1	35	Sa	1046	1.5	47
	1718	2.9	87		1715	2.6	80
	2236	1.6	50		2200	2.2	66
13	0510	4.1	124	28	0423	3.6	110
Sa	1215	1.0	32	Su	1133	1.4	43
	1818	3.1	96		1800	2.9	89
	2347	1.5	45		2314	2.0	61
14	0611	4.1	125	29	0523	3.7	112
Su	1259	0.9	28	M	1219	1.3	39
	1904	3.5	106		1832	3.2	99
15	0045	1.3	40	30	0010	1.8	54
M	0702	4.1	125	Tu	0615	3.8	115
	1335	0.9	26		1243	1.1	34
	1943	3.8	116		1905	3.6	111
				31	0100	1.5	46
				W	0701	3.8	117
					1315	1.0	30
					1938	4.1	124

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0147	1.2	38	16	0302	1.1	35
Th	0745	3.9	118	F	0846	3.3	102
	1348	0.9	26		1432	1.1	34
	2015	4.5	136		2106	4.7	142
2	0236	1.0	31	17	0343	1.1	34
F	0830	3.8	115	Sa	0925	3.2	98
	1424	0.8	23		1502	1.2	37
	2055	4.8	147		2140	4.7	143
3	0327	0.9	26	18	0422	1.1	34
Sa	0916	3.6	111	Su	1002	3.1	93
	1503	0.7	22		1532	1.3	40
	2139	5.1	154		2214	4.6	141
4	0421	0.8	23	19	0501	1.1	35
Su	1005	3.4	105	M	1038	2.9	89
	1545	0.8	23		1602	1.4	43
	2226	5.2	157		2249	4.5	138
5	0517	0.7	22	20	0540	1.2	37
M	1058	3.2	99	Tu	1116	2.8	85
	1632	0.9	27		1634	1.5	47
	2316	5.1	155		2326	4.4	134
6	0616	0.8	24	21	0621	1.3	40
Tu	1157	3.1	93	W	1158	2.7	82
	1724	1.1	33		1708	1.7	51
7	0011	4.9	150	22	0005	4.2	129
W	0719	0.9	27	Th	0705	1.4	42
	1305	2.9	89		1247	2.6	79
	1826	1.3	40		1748	1.8	55
8	0111	4.6	141	23	0047	4.1	124
Th	0828	1.0	30	F	0753	1.4	43
	1422	2.9	87		1345	2.6	79
	1938	1.5	47		1840	2.0	60
9	0218	4.4	133	24	0133	3.9	120
F	0939	1.0	31	Sa	0844	1.4	44
	1540	3.0	90		1452	2.7	81
	2058	1.7	51		1946	2.1	65
10	0326	4.1	125	25	0225	3.8	115
Sa	1041	1.0	31	Su	0934	1.4	44
	1653	3.2	97		1600	2.9	87
	2221	1.7	52		2107	2.2	67
11	0432	3.9	120	26	0322	3.6	111
Su	1133	1.0	31	M	1022	1.4	43
	1752	3.5	106		1659	3.1	95
	2333	1.6	50		2229	2.1	65
12	0534	3.8	115	27	0422	3.6	109
M	1217	1.0	30	Tu	1105	1.3	41
	1840	3.8	116		1745	3.5	106
					2339	2.0	60
13	0035	1.5	46	28	0523	3.5	107
Tu	0630	3.7	112	W	1146	1.2	38
	1254	1.0	30		1826	3.9	119
	1920	4.1	126				
14	0129	1.4	42	29	0040	1.7	52
W	0720	3.5	108	Th	0621	3.5	106
	1328	1.0	30		1226	1.1	34
	1957	4.4	134		1907	4.4	133
15	0218	1.2	38	30	0138	1.4	44
Th	0804	3.4	105	F	0716	3.4	105
	1401	1.0	32		1307	1.0	31
	2032	4.6	140		1950	4.8	146

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0233	1.1	35	16	0336	1.3	39
Sa	0810	3.4	103	Su	0910	3.0	92
	1351	1.0	29		1436	1.4	44
	2036	5.2	157		2121	4.8	145
2	0327	0.9	28	17	0412	1.2	38
Su	0903	3.3	102	M	0947	3.0	91
	1438	0.9	27		1511	1.5	45
	2123	5.4	164		2156	4.8	145
3	0419	0.8	23	18	0447	1.2	37
M	0956	3.3	100	Tu	1022	3.0	90
	1528	0.9	27		1545	1.5	45
	2213	5.4	166		2232	4.7	144
4	0512	0.7	20	19	0522	1.2	37
Tu	1051	3.2	99	W	1059	3.0	90
	1621	1.0	29		1621	1.5	47
	2304	5.3	163		2308	4.6	141
5	0605	0.7	21	20	0558	1.2	37
W	1148	3.2	98	Th	1138	2.9	89
	1717	1.1	33		1700	1.6	49
	2357	5.2	157		2345	4.5	138
6	0700	0.8	23	21	0634	1.2	38
Th	1250	3.2	98	F	1220	3.0	90
	1817	1.3	39		1740	1.7	53
7	0052	4.8	147	22	0023	4.4	133
F	0757	0.9	26	Sa	0712	1.3	39
	1356	3.2	99		1306	3.0	91
	1923	1.5	46		1826	1.9	57
8	0149	4.5	137	23	0102	4.2	127
Sa	0856	1.0	29	Su	0751	1.3	41
	1504	3.3	102		1356	3.1	93
	2035	1.7	53		1920	2.0	62
9	0247	4.1	125	24	0143	3.9	120
Su	0951	1.0	32	M	0832	1.4	43
	1612	3.5	107		1451	3.2	97
	2155	1.9	57		2027	2.2	66
10	0347	3.8	115	25	0231	3.7	113
M	1042	1.1	35	Tu	0915	1.4	44
	1715	3.8	115		1552	3.4	104
	2312	1.9	57		2149	2.2	68
11	0449	3.5	106	26	0328	3.4	105
Tu	1127	1.2	37	W	1001	1.5	45
	1807	4.0	123		1653	3.7	114
					2314	2.1	65
12	0022	1.8	54	27	0437	3.2	99
W	0554	3.3	100	Th	1051	1.4	44
	1209	1.3	40		1749	4.1	126
	1852	4.3	131				
13	0122	1.6	50	28	0032	1.9	58
Th	0655	3.1	96	F	0552	3.1	96
	1248	1.3	41		1144	1.4	42
	1932	4.5	137		1841	4.6	140
14	0213	1.5	45	29	0137	1.6	48
F	0747	3.1	94	Sa	0700	3.1	96
	1326	1.4	43		1237	1.3	39
	2009	4.7	142		1932	5.0	152
15	0257	1.3	41	30	0232	1.2	38
Sa	0831	3.1	93	Su	0800	3.2	97
	1401	1.4	43		1332	1.1	35
	2045	4.7	144		2022	5.3	161
				31	0323	1.0	30
				M	0855	3.3	101
					1426	1.0	31
					2113	5.5	167

Time meridian 60° W: 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

MATARANI, PERU, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height (ft)	Height (cm)
1	0527	0.0	0
M	1109	1.7	52
	1625	0.4	12
	2304	3.1	94
2	0602	0.0	0
Tu	1158	1.8	55
	1717	0.6	18
	2343	2.8	85
3	0638	0.0	0
W	1254	2.0	61
	1819	0.8	24
4	0026	2.5	76
Th	0718	0.1	3
	1356	2.2	67
	1936	0.9	27
5	0117	2.2	67
F	0801	0.1	3
	1501	2.4	73
	2110	1.0	30
6	0223	1.9	58
Sa	0850	0.1	3
	1604	2.8	85
	2243	0.8	24
7	0336	1.6	49
Su	0945	0.0	0
	1705	3.1	94
8	0003	0.6	18
M	0457	1.5	46
	1046	0.0	0
	1802	3.4	104
9	0105	0.3	9
Tu	0608	1.5	46
	1142	-0.1	-3
	1853	3.6	110
10	0154	0.1	3
W	0709	1.6	49
	1238	-0.2	-6
	1941	3.8	116
11	0239	-0.1	-3
Th	0802	1.7	52
	1330	-0.2	-6
	2027	3.9	119
12	0323	-0.2	-6
F	0853	1.8	55
	1421	-0.2	-6
	2112	3.8	116
13	0403	-0.2	-6
Sa	0941	1.9	58
	1511	-0.1	-3
	2154	3.6	110
14	0445	-0.2	-6
Su	1027	2.0	61
	1557	0.1	3
	2234	3.4	104
15	0522	-0.1	-3
M	1116	2.0	61
	1645	0.3	9
	2314	3.0	91
16	0559	0.0	0
Tu	1205	2.0	61
	1737	0.6	18
	2353	2.6	79
17	0636	0.1	3
W	1300	2.1	64
	1837	0.9	27
18	0032	2.2	67
Th	0712	0.3	9
	1359	2.1	64
	1955	1.1	34
19	0114	1.8	55
F	0751	0.4	12
	1505	2.2	67
	2133	1.1	34
20	0209	1.5	46
Sa	0838	0.5	15
	1611	2.4	73
	2310	1.0	30
21	0329	1.3	40
Su	0927	0.5	15
	1705	2.6	79
22	0020	0.8	24
M	0448	1.3	40
	1023	0.5	15
	1750	2.8	85
23	0102	0.7	21
Tu	0552	1.3	40
	1115	0.4	12
	1830	3.0	91
24	0136	0.5	15
W	0641	1.4	43
	1200	0.3	9
	1907	3.2	98
25	0205	0.3	9
Th	0720	1.5	46
	1243	0.1	3
	1942	3.4	104
26	0237	0.1	3
F	0759	1.7	52
	1325	0.0	0
	2018	3.5	107
27	0308	0.0	0
Sa	0837	1.8	55
	1407	0.0	0
	2053	3.5	107
28	0337	-0.1	-3
Su	0915	1.9	58
	1447	0.0	0
	2125	3.4	104
29	0408	-0.1	-3
M	0955	2.1	64
	1531	0.1	3
	2200	3.3	101
30	0439	-0.1	-3
Tu	1037	2.2	67
	1616	0.2	6
	2237	3.0	91
31	0511	-0.1	-3
W	1125	2.3	70
	1708	0.5	15
	2314	2.6	79

FEBRUARY

Day	Time	Height (ft)	Height (cm)
1	0547	0.0	0
Th	1218	2.4	73
	1812	0.7	21
	2359	2.2	67
2	0628	0.0	0
F	1317	2.5	76
	1933	0.9	27
3	0051	1.9	58
Sa	0715	0.1	3
	1433	2.7	82
	2118	0.9	27
4	0207	1.5	46
Su	0816	0.2	6
	1549	2.8	85
	2258	0.7	21
5	0344	1.4	43
M	0929	0.3	9
	1656	3.1	94
6	0009	0.5	15
Tu	0512	1.4	43
	1041	0.2	6
	1755	3.3	101
7	0100	0.2	6
W	0618	1.5	46
	1144	0.1	3
	1845	3.5	107
8	0142	0.0	0
Th	0710	1.7	52
	1239	0.0	0
	1930	3.6	110
9	0220	-0.1	-3
F	0755	1.9	58
	1328	-0.1	-3
	2012	3.6	110
10	0255	-0.2	-6
Sa	0837	2.1	64
	1413	-0.1	-3
	2049	3.5	107
11	0328	-0.2	-6
Su	0916	2.2	67
	1459	0.0	0
	2128	3.3	101
12	0402	-0.2	-6
M	0955	2.3	70
	1542	0.1	3
	2203	3.0	91
13	0432	-0.1	-3
Tu	1037	2.4	73
	1625	0.3	9
	2235	2.7	82
14	0501	0.1	3
W	1119	2.4	73
	1713	0.6	18
	2307	2.3	70
15	0530	0.2	6
Th	1204	2.3	70
	1806	0.8	24
	2342	1.9	58
16	0602	0.4	12
F	1257	2.3	70
	1919	1.0	30
17	0021	1.6	49
Sa	0639	0.5	15
	1402	2.3	70
	2102	1.1	34
18	0118	1.4	43
Su	0725	0.6	18
	1515	2.3	70
	2255	1.0	30
19	0303	1.2	37
M	0835	0.7	21
	1623	2.5	76
	2357	0.8	24
20	0438	1.2	37
Tu	0950	0.7	21
	1715	2.7	82
21	0032	0.6	18
W	0537	1.3	40
	1049	0.5	15
	1757	2.9	88
22	0101	0.4	12
Th	0619	1.5	46
	1142	0.3	9
	1834	3.1	94
23	0126	0.2	6
F	0654	1.7	52
	1224	0.2	6
	1910	3.3	101
24	0151	0.1	3
Sa	0730	2.0	61
	1309	0.0	0
	1945	3.3	101
25	0220	-0.1	-3
Su	0805	2.2	67
	1351	-0.1	-3
	2020	3.3	101
26	0251	-0.2	-6
M	0844	2.4	73
	1437	-0.1	-3
	2056	3.2	98
27	0320	-0.3	-9
Tu	0924	2.6	79
	1523	0.0	0
	2132	3.0	91
28	0352	-0.2	-6
W	1008	2.8	85
	1612	0.1	3
	2213	2.7	82

MARCH

Day	Time	Height (ft)	Height (cm)
1	0426	-0.2	-6
Th	1055	2.9	88
	1709	0.3	9
	2255	2.3	70
2	0505	-0.1	-3
F	1148	2.9	88
	1815	0.5	15
	2345	1.9	58
3	0550	0.1	3
Sa	1251	2.8	85
	1941	0.7	21
4	0050	1.5	46
Su	0645	0.3	9
	1409	2.8	85
	2124	0.7	21
5	0226	1.3	40
M	0758	0.4	12
	1529	2.9	88
	2256	0.5	15
6	0409	1.3	40
Tu	0923	0.5	15
	1643	3.0	91
	2352	0.3	9
7	0523	1.5	46
W	1043	0.4	12
	1739	3.2	98
8	0037	0.1	3
Th	0616	1.8	55
	1145	0.2	6
	1828	3.3	101
9	0113	0.0	0
F	0658	2.0	61
	1237	0.1	3
	1910	3.3	101
10	0145	-0.1	-3
Sa	0737	2.2	67
	1323	0.0	0
	1948	3.2	98
11	0217	-0.1	-3
Su	0814	2.4	73
	1405	0.0	0
	2024	3.0	91
12	0245	-0.1	-3
M	0851	2.6	79
	1447	0.1	3
	2057	2.8	85
13	0312	-0.1	-3
Tu	0925	2.7	82
	1528	0.2	6
	2128	2.5	76
14	0339	0.0	0
W	1000	2.7	82
	1610	0.3	9
	2200	2.2	67
15	0408	0.2	6
Th	1036	2.6	79
	1659	0.5	15
	2236	1.9	58
16	0434	0.3	9
F	1118	2.6	79
	1751	0.7	21
	2311	1.7	52
17	0503	0.5	15
Sa	1204	2.5	76
	1900	0.9	27
	2355	1.4	43
18	0537	0.6	18
Su	1305	2.4	73
	2033	0.9	27
19	0111	1.2	37
M	0623	0.8	24
	1415	2.4	73
	2209	0.8	24
20	0303	1.2	37
Tu	0742	0.8	24
	1527	2.5	76
	2304	0.7	21
21	0422	1.3	40
W	0911	0.8	24
	1625	2.6	79
	2341	0.5	15
22	0512	1.5	46
Th	1020	0.7	21
	1712	2.8	85
23	0008	0.3	9
F	0547	1.7	52
	1113	0.5	15
	1752	2.9	88
24	0033	0.2	6
Sa	0622	2.0	61
	1203	0.3	9
	1831	3.0	91
25	0059	0.0	0
Su	0659	2.4	73
	1250	0.1	3
	1909	3.0	91
26	0130	-0.2	-6
M	0736	2.7	82
	1336	-0.1	-3
	1948	2.9	88
27	0202	-0.3	-9
Tu	0817	3.0	91
	1426	-0.1	-3
	2027	2.8	85
28	0235	-0.3	-9
W	0859	3.2	98
	1516	-0.1	-3
	2109	2.5	76
29	0310	-0.3	-9
Th	0944	3.3	101
	1612	0.0	0
	2154	2.2	67
30	0349	-0.2	-6
F	1031	3.3	101
	1712	0.2	6
	2246	1.9	58
31	0431	0.0	0
Sa	1130	3.2	98
	1823	0.3	9
	2346	1.6	49

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0524	0.2	6	16 M	0455	0.7	21
	1236	3.1	94		1223	2.6	79
	1946	0.4	12		2002	0.7	21
2 M	0108	1.4	43	17 Tu	0116	1.2	37
	0630	0.4	12		0545	0.8	24
	1349	3.0	91		1324	2.5	76
	2114	0.4	12		2109	0.6	18
3 Tu	0247	1.4	43	18 W	0244	1.2	37
	0755	0.6	18		0659	0.9	27
	1505	2.9	88		1424	2.5	76
	2224	0.3	9		2158	0.5	15
4 W	0409	1.5	46	19 Th	0347	1.4	43
	0921	0.6	18		0825	0.9	27
	1614	2.9	88		1522	2.6	79
	2320	0.1	3		2233	0.4	12
5 Th	0512	1.8	55	20 F	0431	1.6	49
	1038	0.5	15		0941	0.8	24
	1713	2.9	88		1614	2.6	79
	2357	0.0	0		2304	0.2	6
6 F	0600	2.1	64	21 Sa	0510	2.0	61
	1136	0.4	12		1044	0.6	18
	1759	2.9	88		1659	2.6	79
					2333	0.1	3
7 Sa	0033	0.0	0	22 Su	0549	2.3	70
	0639	2.3	70		1141	0.4	12
	1229	0.3	9		1745	2.6	79
	1842	2.8	85				
8 Su	0103	0.0	0	23 M	0005	-0.1	-3
	0717	2.6	79		0628	2.7	82
	1315	0.2	6		1234	0.2	6
	1917	2.6	79		1828	2.5	76
9 M	0131	0.0	0	24 Tu	0039	-0.2	-6
	0750	2.8	85		0707	3.1	94
	1359	0.2	6		1328	0.0	0
	1951	2.4	73		1914	2.4	73
10 Tu	0158	0.0	0	25 W	0115	-0.3	-9
	0822	2.9	88		0753	3.4	104
	1440	0.2	6		1420	-0.1	-3
	2028	2.2	67		2001	2.3	70
11 W	0225	0.0	0	26 Th	0156	-0.3	-9
	0857	2.9	88		0838	3.6	110
	1522	0.3	9		1516	-0.1	-3
	2102	2.0	61		2050	2.1	64
12 Th	0253	0.1	3	27 F	0235	-0.3	-9
	0931	3.0	91		0927	3.7	113
	1605	0.4	12		1613	-0.1	-3
	2137	1.8	55		2145	1.8	55
13 F	0319	0.3	9	28 Sa	0321	-0.2	-6
	1007	2.9	88		1018	3.7	113
	1653	0.5	15		1719	0.0	0
	2216	1.6	49		2245	1.6	49
14 Sa	0347	0.4	12	29 Su	0413	0.0	0
	1046	2.8	85		1117	3.5	107
	1746	0.6	18		1824	0.1	3
	2301	1.4	43		2354	1.5	46
15 Su	0420	0.6	18	30 M	0509	0.3	9
	1132	2.7	82		1217	3.3	101
	1851	0.7	21		1936	0.1	3
	2354	1.3	40				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0115	1.5	46	16 W	0100	1.3	40
	0621	0.5	15		0525	0.8	24
	1324	3.1	94		1239	2.7	82
	2043	0.1	3		2007	0.4	12
2 W	0238	1.6	49	17 Th	0159	1.4	43
	0743	0.6	18		0630	0.9	27
	1433	2.9	88		1328	2.6	79
	2142	0.1	3		2049	0.3	9
3 Th	0350	1.8	55	18 F	0258	1.6	49
	0909	0.7	21		0746	1.0	30
	1535	2.7	82		1419	2.5	76
	2230	0.0	0		2126	0.2	6
4 F	0446	2.1	64	19 Sa	0346	1.9	58
	1023	0.7	21		0906	0.9	27
	1632	2.6	79		1511	2.4	73
	2311	0.0	0		2158	0.1	3
5 Sa	0535	2.3	70	20 Su	0432	2.2	67
	1126	0.6	18		1018	0.8	24
	1720	2.4	73		1607	2.3	70
	2343	0.0	0		2235	0.0	0
6 Su	0613	2.6	79	21 M	0517	2.6	79
	1221	0.5	15		1123	0.6	18
	1805	2.2	67		1659	2.2	67
					2312	-0.1	-3
7 M	0015	0.0	0	22 Tu	0603	3.1	94
	0650	2.8	85		1227	0.4	12
	1308	0.4	12		1754	2.1	64
	1845	2.1	64		2355	-0.3	-9
8 Tu	0042	0.0	0	23 W	0645	3.4	104
	0724	3.0	91		1323	0.2	6
	1356	0.4	12		1850	1.9	58
	1922	1.9	58				
9 W	0111	0.1	3	24 Th	0039	-0.3	-9
	0758	3.1	94		0734	3.7	113
	1439	0.3	9		1420	0.0	0
	2001	1.8	55		1943	1.8	55
10 Th	0140	0.1	3	25 F	0125	-0.3	-9
	0833	3.1	94		0823	3.9	119
	1521	0.3	9		1519	-0.1	-3
	2040	1.6	49		2041	1.7	52
11 F	0212	0.2	6	26 Sa	0214	-0.3	-9
	0909	3.1	94		0915	3.9	119
	1603	0.3	9		1614	-0.2	-6
	2122	1.5	46		2139	1.7	52
12 Sa	0247	0.3	9	27 Su	0306	-0.1	-3
	0947	3.1	94		1007	3.8	116
	1650	0.4	12		1710	-0.2	-6
	2208	1.4	43		2242	1.6	49
13 Su	0319	0.4	12	28 M	0401	0.0	0
	1026	3.0	91		1101	3.7	113
	1740	0.4	12		1809	-0.1	-3
	2257	1.3	40		2348	1.6	49
14 M	0354	0.6	18	29 Tu	0500	0.3	9
	1107	2.9	88		1156	3.4	104
	1833	0.4	12		1908	-0.1	-3
	2354	1.3	40				
15 Tu	0434	0.7	21	30 W	0059	1.7	52
	1151	2.8	85		0607	0.5	15
	1921	0.4	12		1254	3.1	94
					2001	0.0	0
				31 Th	0208	1.8	55
					0721	0.7	21
					1351	2.8	85
					2051	0.0	0

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0315	2.0	61	16 Sa	0208	1.8	55
	0840	0.8	24		0718	1.0	30
	1449	2.5	76		1326	2.4	73
	2135	0.1	3		2021	0.1	3
2 Sa	0414	2.2	67	17 Su	0301	2.1	64
	0959	0.9	27		0837	1.0	30
	1545	2.2	67		1418	2.2	67
	2217	0.1	3		2100	0.1	3
3 Su	0504	2.5	76	18 M	0356	2.5	76
	1113	0.8	24		1001	0.9	27
	1636	1.9	58		1518	1.9	58
	2252	0.1	3		2143	0.0	0
4 M	0547	2.7	82	19 Tu	0448	2.9	88
	1214	0.7	21		1120	0.7	21
	1726	1.8	55		1626	1.8	55
	2326	0.1	3		2233	-0.1	-3
5 Tu	0626	2.9	88	20 W	0541	3.2	98
	1306	0.6	18		1227	0.5	15
	1812	1.6	49		1733	1.7	52
					2322	-0.2	-6
6 W	0000	0.2	6	21 Th	0632	3.5	107
	0702	3.0	91		1326	0.2	6
	1355	0.5	15		1837	1.6	49
	1858	1.5	46				
7 Th	0035	0.2	6	22 F	0016	-0.2	-6
	0739	3.2	98		0722	3.8	116
	1436	0.4	12		1421	0.0	0
	1942	1.5	46		1937	1.6	49
8 F	0111	0.2	6	23 Sa	0109	-0.3	-9
	0815	3.2	98		0813	3.9	119
	1515	0.3	9		1513	-0.1	-3
	2026	1.5	46		2034	1.7	52
9 Sa	0146	0.2	6	24 Su	0201	-0.2	-6
	0851	3.3	101		0904	4.0	122
	1557	0.3	9		1602	-0.2	-6
	2110	1.4	43		2131	1.7	52
10 Su	0224	0.3	9	25 M	0256	-0.2	-6
	0928	3.3	101		0953	3.9	119
	1636	0.2	6		1651	-0.3	-9
	2157	1.4	43		2229	1.8	55
11 M	0303	0.4	12	26 Tu	0352	0.0	0
	1005	3.2	98		1041	3.7	113
	1715	0.2	6		1738	-0.2	-6
	2240	1.4	43		2325	1.8	55
12 Tu	0342	0.5	15	27 W	0446	0.2	6
	1042	3.2	98		1130	3.4	104
	1757	0.2	6		1824	-0.2	-6
	2328	1.4	43				
13 W	0424	0.6	18	28 Th	0024	1.9	58
	1119	3.0	91		0546	0.5	15
	1833	0.2	6		1216	3.0	91
					1910	-0.1	-3
14 Th	0019	1.5	46	29 F	0126	2.0	61
	0509	0.7	21		0652	0.7	21
	1159	2.9	88		1304	2.6	79
	1910	0.2	6		1952	0.1	3
15 F	0112	1.6	49	30 Sa	0229	2.2	67
	0608	0.8	24		0809	0.9	27
	1241	2.7	82		1353	2.2	67
	1943	0.2	6		2036	0.2	6

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

MATARANI, PERU, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0333	2.3	70	16 M	0221	2.4	73
	0937	1.0	30		0827	1.0	30
	1449	1.8	55		1339	1.9	58
	2118	0.2	6		2012	0.1	3
2 M	0430	2.5	76	17 Tu	0326	2.7	82
	1102	1.0	30		1003	0.9	27
	1551	1.6	49		1449	1.6	49
	2201	0.3	9		2105	0.1	3
3 Tu	0516	2.7	82	18 W	0430	3.0	91
	1212	0.8	24		1126	0.7	21
	1651	1.4	43		1614	1.5	46
	2243	0.3	9		2206	0.0	0
4 W	0601	2.9	88	19 Th	0528	3.3	101
	1303	0.7	21		1232	0.4	12
	1752	1.4	43		1731	1.4	43
	2324	0.3	9		2310	0.0	0
5 Th	0642	3.0	91	20 F	0624	3.5	107
	1346	0.5	15		1327	0.2	6
	1842	1.4	43		1837	1.5	46
6 F	0006	0.3	9	21 Sa	0008	-0.1	-3
	0720	3.2	98		0714	3.8	116
	1421	0.4	12		1413	0.0	0
	1930	1.4	43		1934	1.7	52
7 Sa	0048	0.2	6	22 Su	0103	-0.2	-6
	0756	3.3	101		0803	3.9	119
	1457	0.3	9		1455	-0.2	-6
	2011	1.5	46		2026	1.8	55
8 Su	0130	0.2	6	23 M	0156	-0.2	-6
	0831	3.4	104		0848	3.8	116
	1532	0.2	6		1538	-0.3	-9
	2051	1.5	46		2114	2.0	61
9 M	0209	0.2	6	24 Tu	0248	-0.2	-6
	0905	3.4	104		0931	3.7	113
	1604	0.1	3		1618	-0.3	-9
	2131	1.6	49		2203	2.1	64
10 Tu	0246	0.2	6	25 W	0338	0.0	0
	0940	3.4	104		1013	3.4	104
	1636	0.0	0		1657	-0.2	-6
	2212	1.7	52		2253	2.2	67
11 W	0328	0.3	9	26 Th	0429	0.2	6
	1012	3.2	98		1054	3.1	94
	1708	0.0	0		1735	-0.1	-3
	2253	1.8	55		2342	2.2	67
12 Th	0410	0.4	12	27 F	0522	0.5	15
	1048	3.1	94		1135	2.7	82
	1740	0.0	0		1812	0.1	3
	2335	1.9	58				
13 F	0457	0.6	18	28 Sa	0036	2.2	67
	1123	2.8	85		0623	0.7	21
	1812	0.1	3		1217	2.3	70
					1852	0.2	6
14 Sa	0027	2.0	61	29 Su	0135	2.3	70
	0551	0.8	24		0737	1.0	30
	1202	2.5	76		1301	1.9	58
	1847	0.1	3		1931	0.3	9
15 Su	0119	2.2	67	30 M	0241	2.3	70
	0700	0.9	27		0913	1.0	30
	1244	2.2	67		1403	1.5	46
	1926	0.1	3		2017	0.5	15
				31 Tu	0348	2.4	73
					1051	1.0	30
					1517	1.3	40
					2114	0.5	15

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0446	2.6	79	16 Th	0417	3.0	91
	1203	0.8	24		1131	0.5	15
	1638	1.3	40		1633	1.4	43
	2206	0.5	15		2201	0.2	6
2 Th	0536	2.8	85	17 F	0521	3.2	98
	1249	0.7	21		1226	0.3	9
	1741	1.3	40		1744	1.5	46
	2305	0.4	12		2310	0.1	3
3 F	0619	2.9	88	18 Sa	0613	3.4	104
	1323	0.5	15		1311	0.1	3
	1829	1.4	43		1837	1.7	52
	2349	0.3	9				
4 Sa	0654	3.1	94	19 Su	0009	0.0	0
	1352	0.3	9		0702	3.6	110
	1909	1.5	46		1349	-0.1	-3
					1925	1.9	58
5 Su	0034	0.2	6	20 M	0101	-0.1	-3
	0729	3.3	101		0744	3.6	110
	1421	0.2	6		1425	-0.2	-6
	1946	1.7	52		2011	2.2	67
6 M	0115	0.1	3	21 Tu	0151	-0.2	-6
	0804	3.3	101		0826	3.5	107
	1449	0.1	3		1501	-0.2	-6
	2021	1.8	55		2053	2.3	70
7 Tu	0154	0.1	3	22 W	0239	-0.1	-3
	0836	3.4	104		0905	3.3	101
	1518	0.0	0		1533	-0.2	-6
	2059	2.0	61		2135	2.4	73
8 W	0233	0.1	3	23 Th	0324	0.0	0
	0909	3.3	101		0943	3.0	91
	1548	-0.1	-3		1608	-0.1	-3
	2138	2.1	64		2217	2.5	76
9 Th	0314	0.1	3	24 F	0413	0.2	6
	0941	3.1	94		1021	2.7	82
	1616	-0.1	-3		1640	0.0	0
	2216	2.2	67		2301	2.5	76
10 F	0400	0.3	9	25 Sa	0501	0.5	15
	1016	2.9	88		1057	2.3	70
	1647	-0.1	-3		1713	0.2	6
	2259	2.4	73		2348	2.5	76
11 Sa	0447	0.4	12	26 Su	0559	0.7	21
	1052	2.6	79		1136	1.9	58
	1719	0.0	0		1746	0.4	12
	2348	2.4	73				
12 Su	0545	0.6	18	27 M	0039	2.4	73
	1129	2.2	67		0713	0.9	27
	1756	0.1	3		1221	1.6	49
					1825	0.5	15
13 M	0043	2.5	76	28 Tu	0145	2.4	73
	0659	0.8	24		0851	1.0	30
	1219	1.9	58		1327	1.3	40
	1841	0.2	6		1916	0.7	21
14 Tu	0149	2.6	79	29 W	0258	2.4	73
	0834	0.9	27		1035	0.9	27
	1327	1.5	46		1510	1.2	37
	1936	0.3	9		2025	0.7	21
15 W	0305	2.8	85	30 Th	0407	2.5	76
	1015	0.8	24		1136	0.7	21
	1500	1.4	43		1635	1.3	40
	2045	0.3	9		2141	0.7	21
				31 F	0459	2.7	82
					1213	0.6	18
					1733	1.4	43
					2243	0.6	18

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0544	2.8	85	16 Su	0555	3.2	98
	1241	0.4	12		1242	0.0	0
	1809	1.6	49		1831	2.1	64
	2332	0.4	12				
2 Su	0618	3.0	91	17 M	0009	0.1	3
	1306	0.3	9		0640	3.2	98
	1841	1.8	55		1315	-0.1	-3
					1910	2.3	70
3 M	0014	0.3	9	18 Tu	0058	0.0	0
	0654	3.1	94		0721	3.1	94
	1332	0.1	3		1346	-0.2	-6
	1916	2.0	61		1949	2.5	76
4 Tu	0056	0.1	3	19 W	0146	0.0	0
	0727	3.2	98		0800	3.0	91
	1359	0.0	0		1418	-0.2	-6
	1949	2.2	67		2027	2.7	82
5 W	0135	0.0	0	20 Th	0230	0.0	0
	0800	3.1	94		0836	2.8	85
	1427	-0.1	-3		1448	-0.1	-3
	2024	2.5	76		2103	2.8	85
6 Th	0217	0.0	0	21 F	0315	0.1	3
	0834	3.0	91		0911	2.5	76
	1454	-0.2	-6		1517	0.0	0
	2103	2.7	82		2141	2.8	85
7 F	0303	0.0	0	22 Sa	0400	0.3	9
	0910	2.8	85		0947	2.2	67
	1526	-0.2	-6		1546	0.1	3
	2141	2.8	85		2220	2.8	85
8 Sa	0349	0.1	3	23 Su	0449	0.5	15
	0946	2.5	76		1026	1.9	58
	1559	-0.1	-3		1615	0.3	9
	2227	2.9	88		2304	2.7	82
9 Su	0445	0.3	9	24 M	0545	0.6	18
	1028	2.2	67		1106	1.6	49
	1634	0.0	0		1647	0.5	15
	2317	2.9	88		2351	2.6	79
10 M	0548	0.5	15	25 Tu	0657	0.8	24
	1117	1.9	58		1159	1.4	43
	1714	0.1	3		1725	0.7	21
11 Tu	0017	2.9	88	26 W	0052	2.5	76
	0707	0.6	18		0827	0.8	24
	1217	1.5	46		1324	1.2	37
	1807	0.3	9		1820	0.8	24
12 W	0129	2.9	88	27 Th	0202	2.4	73
	0843	0.6	18		0952	0.7	21
	1347	1.3	40		1510	1.2	37
	1917	0.4	12		1942	0.9	27
13 Th	0248	2.9	88	28 F	0312	2.5	76
	1012	0.5	15		1048	0.6	18
	1529	1.3	40		1623	1.3	40
	2045	0.5	15		2105	0.9	27
14 F	0403	3.0	91	29 Sa	0409	2.6	79
	1115	0.3	9		1120	0.5	15
	1648	1.5	46		1705	1.5	46
	2206	0.4	12		2211	0.7	21
15 Sa	0504	3.1	94	30 Su	0454	2.7	82
	1203	0.1	3		1149	0.3	9
	1744	1.8	55		1737	1.8	55
	2312	0.3	9		2303	0.6	18

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0534	2.8	85	16 Tu	0005	0.3	9
	1213	0.2	6		0614	2.7	82
	1809	2.1	64		1234	-0.1	-3
	2349	0.4	12		1853	2.7	82
2 Tu	0608	2.8	85	17 W	0054	0.2	6
	1239	0.0	0		0653	2.6	79
	1841	2.4	73		1306	-0.1	-3
					1929	2.9	88
3 W	0034	0.2	6	18 Th	0141	0.2	6
	0646	2.8	85		0730	2.4	73
	1306	-0.1	-3		1333	-0.1	-3
	1916	2.7	82		2005	3.0	91
4 Th	0120	0.1	3	19 F	0224	0.2	6
	0721	2.8	85		0807	2.2	67
	1335	-0.2	-6		1402	0.0	0
	1952	3.0	91		2037	3.1	94
5 F	0206	0.0	0	20 Sa	0310	0.2	6
	0803	2.6	79		0845	2.0	61
	1407	-0.3	-9		1431	0.1	3
	2034	3.2	98		2115	3.1	94
6 Sa	0255	0.0	0	21 Su	0355	0.3	9
	0843	2.4	73		0924	1.8	55
	1441	-0.2	-6		1500	0.2	6
	2116	3.3	101		2151	3.0	91
7 Su	0348	0.0	0	22 M	0444	0.4	12
	0925	2.1	64		1004	1.6	49
	1519	-0.2	-6		1531	0.4	12
	2204	3.4	104		2232	2.9	88
8 M	0445	0.2	6	23 Tu	0539	0.5	15
	1016	1.8	55		1052	1.4	43
	1600	0.0	0		1603	0.6	18
	2257	3.3	101		2317	2.8	85
9 Tu	0553	0.3	9	24 W	0642	0.6	18
	1116	1.6	49		1154	1.2	37
	1650	0.2	6		1645	0.7	21
	2359	3.2	98				
10 W	0712	0.4	12	25 Th	0010	2.6	79
	1235	1.4	43		0751	0.6	18
	1753	0.4	12		1315	1.2	37
					1730	0.9	27
11 Th	0110	3.1	94	26 F	0107	2.5	76
	0836	0.3	9		0853	0.5	15
	1408	1.4	43		1442	1.3	40
	1912	0.6	18		1850	1.0	30
12 F	0225	3.0	91	27 Sa	0207	2.5	76
	0946	0.2	6		0942	0.5	15
	1536	1.5	46		1541	1.4	43
	2045	0.6	18		2012	1.0	30
13 Sa	0338	2.9	88	28 Su	0303	2.5	76
	1043	0.1	3		1017	0.4	12
	1642	1.8	55		1623	1.7	52
	2204	0.5	15		2128	0.9	27
14 Su	0437	2.9	88	29 M	0351	2.5	76
	1126	0.0	0		1046	0.2	6
	1733	2.1	64		1700	2.0	61
	2310	0.4	12		2231	0.7	21
15 M	0529	2.9	88	30 Tu	0436	2.5	76
	1203	-0.1	-3		1113	0.1	3
	1815	2.4	73		1733	2.3	70
					2326	0.5	15
				31 W	0518	2.5	76
					1141	-0.1	-3
					1809	2.7	82

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0018	0.3	9	16 F	0142	0.4	12
	0604	2.4	73		0705	1.9	58
	1213	-0.2	-6		1254	0.0	0
	1850	3.1	94		1943	3.2	98
2 F	0109	0.2	6	17 Sa	0226	0.3	9
	0650	2.3	70		0748	1.7	52
	1250	-0.3	-9		1327	0.1	3
	1929	3.4	104		2020	3.2	98
3 Sa	0200	0.0	0	18 Su	0311	0.3	9
	0734	2.2	67		0827	1.6	49
	1327	-0.3	-9		1355	0.2	6
	2014	3.6	110		2056	3.2	98
4 Su	0251	0.0	0	19 M	0353	0.3	9
	0823	2.0	61		0909	1.5	46
	1408	-0.3	-9		1430	0.3	9
	2100	3.7	113		2133	3.2	98
5 M	0349	0.0	0	20 Tu	0438	0.3	9
	0915	1.8	55		0954	1.4	43
	1454	-0.2	-6		1505	0.4	12
	2149	3.7	113		2213	3.1	94
6 Tu	0449	0.0	0	21 W	0524	0.3	9
	1012	1.6	49		1045	1.3	40
	1540	0.0	0		1542	0.5	15
	2245	3.6	110		2252	3.0	91
7 W	0551	0.0	0	22 Th	0615	0.4	12
	1117	1.5	46		1138	1.3	40
	1638	0.2	6		1623	0.7	21
	2343	3.4	104		2333	2.9	88
8 Th	0700	0.1	3	23 F	0702	0.4	12
	1236	1.5	46		1239	1.3	40
	1744	0.4	12		1708	0.8	24
9 F	0047	3.2	98	24 Sa	0015	2.7	82
	0806	0.1	3		0747	0.4	12
	1401	1.6	49		1342	1.4	43
	1903	0.6	18		1807	0.9	27
10 Sa	0154	3.0	91	25 Su	0105	2.6	79
	0905	0.0	0		0829	0.3	9
	1516	1.8	55		1441	1.6	49
	2029	3.7	21		1924	1.0	30
11 Su	0258	2.8	85	26 M	0152	2.4	73
	0957	0.0	0		0903	0.3	9
	1619	2.1	64		1532	1.8	55
	2150	0.7	21		2043	1.0	30
12 M	0358	2.6	79	27 Tu	0244	2.3	70
	1041	0.0	0		0936	0.2	6
	1712	2.4	73		1616	2.2	67
	2302	0.6	18		2158	0.9	27
13 Tu	0454	2.4	73	28 W	0337	2.2	67
	1118	0.0	0		1011	0.1	3
	1754	2.6	79		1657	2.5	76
					2307	0.7	21
14 W	0001	0.5	15	29 Th	0433	2.0	61
	0542	2.2	67		1048	-0.1	-3
	1152	0.0	0		1740	3.0	91
	1833	2.9	88				
15 Th	0055	0.4	12	30 F	0008	0.5	15
	0627	2.0	61		0526	1.9	58
	1223	0.0	0		1129	-0.2	-6
	1909	3.1	94		1825	3.3	101

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0103	0.3	9	16 Su	0227	0.4	12
	0623	1.8	55		0735	1.5	46
	1213	-0.3	-9		1301	0.2	6
	1911	3.6	110		2006	3.3	101
2 Su	0159	0.1	3	17 M	0306	0.3	9
	0716	1.8	55		0816	1.5	46
	1258	-0.3	-9		1336	0.2	6
	1959	3.9	119		2040	3.3	101
3 M	0252	-0.1	-3	18 Tu	0343	0.2	6
	0812	1.7	52		0858	1.5	46
	1346	-0.3	-9		1415	0.2	6
	2048	4.0	122		2116	3.3	101
4 Tu	0348	-0.2	-6	19 W	0419	0.2	6
	0910	1.7	52		0941	1.5	46
	1438	-0.2	-6		1453	0.3	9
	2139	3.9	119		2151	3.3	101
5 W	0440	-0.2	-6	20 Th	0457	0.2	6
	1008	1.7	52		1023	1.5	46
	1531	-0.1	-3		1529	0.4	12
	2232	3.8	116		2226	3.2	98
6 Th	0535	-0.2	-6	21 F	0533	0.2	6
	1111	1.7	52		1109	1.5	46
	1630	0.1	3		1607	0.5	15
	2324	3.6	110		2300	3.0	91
7 F	0631	-0.1	-3	22 Sa	0609	0.2	6
	1220	1.7	52		1154	1.5	46
	1732	0.4	12		1649	0.7	21
					2335	2.8	85
8 Sa	0020	3.3	101	23 Su	0644	0.2	6
	0724	-0.1	-3		1243	1.6	49
	1329	1.8	55		1740	0.8	24
	1844	0.6	18				
9 Su	0117	2.9	88	24 M	0011	2.6	79
	0816	0.0	0		0716	0.2	6
	1438	2.0	61		1337	1.8	55
	2007	0.8	24		1844	1.0	30
10 M	0214	2.5	76	25 Tu	0053	2.4	73
	0905	0.0	0		0750	0.2	6
	1544	2.3	70		1433	2.0	61
	2130	0.9	27		2004	1.1	34
11 Tu	0315	2.2	67	26 W	0142	2.1	64
	0950	0.1	3		0830	0.2	6
	1643	2.5	76		1530	2.3	70
	2251	0.8	24		2134	1.0	30
12 W	0414	1.9	58	27 Th	0241	1.9	58
	1030	0.1	3		0914	0.1	3
	1731	2.7	82		1625	2.7	82
					2257	0.9	27
13 Th	0003	0.7	21	28 F	0353	1.7	52
	0509	1.7	52		1003	0.0	0
	1109	0.1	3		1720	3.1	94
	1813	2.9	88				
14 F	0100	0.6	18	29 Sa	0007	0.6	18
	0605	1.6	49		0504	1.6	49
	1147	0.2	6		1055	-0.1	-3
	1852	3.1	94		1809	3.4	104
15 Sa	0145	0.5	15	30 Su	0106	0.3	9
	0651	1.5	46		0611	1.6	49
	1224	0.2	6		1150	-0.2	-6
	1930	3.2	98		1901	3.7	113
				31 M	0158	0.1	3
					0711	1.6	49
					1245	-0.3	-9
					1949	3.9	119

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CALLAO, PERU, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm
1	0311	1.0	30
M	0806	1.8	55
	1348	0.6	18
	2056	3.1	94
2	0349	0.9	27
Tu	0904	1.8	55
	1433	0.8	24
	2133	2.9	88
3	0430	0.8	24
W	1013	1.9	58
	1533	1.1	34
	2211	2.7	82
4	0513	0.7	21
Th	1136	2.1	64
	1648	1.3	40
	2300	2.5	76
5	0605	0.6	18
F	1302	2.3	70
	1830	1.5	46
	2356	2.3	70
6	0657	0.4	12
Sa	1416	2.7	82
	2012	1.5	46
7	0058	2.2	67
Su	0751	0.3	9
	1516	3.0	91
	2135	1.4	43
8	0214	2.1	64
M	0847	0.1	3
	1612	3.3	101
	2241	1.3	40
9	0320	2.0	61
Tu	0942	0.0	0
	1701	3.5	107
	2337	1.1	34
10	0419	2.0	61
W	1034	-0.1	-3
	1749	3.7	113
11	0026	1.0	30
Th	0518	2.1	64
	1123	0.0	0
	1832	3.7	113
12	0111	0.9	27
F	0610	2.1	64
	1209	0.0	0
	1915	3.7	113
13	0153	0.8	24
Sa	0700	2.1	64
	1252	0.2	6
	1955	3.5	107
14	0239	0.8	24
Su	0750	2.0	61
	1337	0.5	15
	2033	3.3	101
15	0320	0.8	24
M	0843	2.0	61
	1419	0.8	24
	2111	3.0	91
16	0359	0.9	27
Tu	0941	2.0	61
	1501	1.1	34
	2143	2.7	82
17	0439	0.9	27
W	1047	2.0	61
	1552	1.4	43
	2215	2.5	76
18	0524	0.9	27
Th	1206	2.0	61
	1700	1.7	52
	2240	2.2	67
19	0604	0.9	27
F	1335	2.2	67
	1854	1.8	55
	2315	2.0	61
20	0650	0.9	27
Sa	1445	2.4	73
	2104	1.8	55
21	0015	1.9	58
Su	0738	0.8	24
	1530	2.6	79
	2220	1.7	52
22	0130	1.8	55
M	0823	0.7	21
	1607	2.8	85
	2255	1.5	46
23	0239	1.8	55
Tu	0908	0.6	18
	1641	3.0	91
	2323	1.4	43
24	0335	1.8	55
W	0950	0.5	15
	1712	3.2	98
	2349	1.3	40
25	0421	1.9	58
Th	1027	0.4	12
	1744	3.3	101
26	0020	1.2	37
F	0504	2.0	61
	1104	0.3	9
	1813	3.4	104
27	0049	1.1	34
Sa	0545	2.1	64
	1143	0.3	9
	1846	3.5	107
28	0118	1.0	30
Su	0625	2.2	67
	1222	0.3	9
	1918	3.4	104
29	0149	0.9	27
M	0711	2.2	67
	1300	0.5	15
	1950	3.3	101
30	0222	0.8	24
Tu	0800	2.3	70
	1345	0.7	21
	2021	3.1	94
31	0256	0.7	21
W	0851	2.4	73
	1435	0.9	27
	2054	2.9	88

FEBRUARY

Day	Time	Height ft	Height cm
1	0335	0.7	21
Th	0954	2.4	73
	1531	1.3	40
	2133	2.6	79
2	0421	0.6	18
F	1114	2.5	76
	1650	1.5	46
	2218	2.4	73
3	0517	0.6	18
Sa	1240	2.6	79
	1845	1.7	52
	2323	2.1	64
4	0624	0.6	18
Su	1406	2.9	88
	2042	1.6	49
5	0053	1.9	58
M	0736	0.5	15
	1515	3.1	94
	2201	1.4	43
6	0223	1.9	58
Tu	0841	0.4	12
	1607	3.4	104
	2250	1.2	37
7	0334	2.0	61
W	0940	0.3	9
	1654	3.5	107
	2332	1.1	34
8	0430	2.1	64
Th	1032	0.2	6
	1735	3.6	110
9	0010	0.9	27
F	0520	2.3	70
	1118	0.2	6
	1814	3.6	110
10	0045	0.8	24
Sa	0604	2.4	73
	1200	0.3	9
	1849	3.5	107
11	0118	0.8	24
Su	0649	2.4	73
	1242	0.5	15
	1921	3.3	101
12	0149	0.8	24
M	0731	2.4	73
	1321	0.7	21
	1951	3.1	94
13	0221	0.8	24
Tu	0813	2.4	73
	1359	1.0	30
	2019	2.9	88
14	0250	0.9	27
W	0855	2.4	73
	1435	1.3	40
	2040	2.6	79
15	0318	0.9	27
Th	0947	2.3	70
	1518	1.5	46
	2102	2.3	70
16	0347	1.0	30
F	1050	2.3	70
	1616	1.8	55
	2110	2.1	64
17	0423	1.1	34
Sa	1219	2.3	70
	1824	1.9	58
	2109	2.0	61
18	0519	1.1	34
Su	1352	2.4	73
19	0629	1.1	34
M	1457	2.6	79
	2230	1.6	49
20	0054	1.7	52
Tu	0740	1.0	30
	1532	2.8	85
	2233	1.5	46
21	0231	1.8	55
W	0839	0.9	27
	1605	3.0	91
	2248	1.4	43
22	0325	1.9	58
Th	0925	0.7	21
	1637	3.2	98
	2313	1.2	37
23	0411	2.1	64
F	1007	0.5	15
	1706	3.4	104
	2335	1.1	34
24	0450	2.3	70
Sa	1049	0.4	12
	1738	3.4	104
25	0002	0.9	27
Su	0531	2.5	76
	1131	0.4	12
	1807	3.5	107
26	0031	0.7	21
M	0615	2.7	82
	1213	0.5	15
	1839	3.4	104
27	0103	0.6	18
Tu	0659	2.8	85
	1255	0.6	18
	1914	3.2	98
28	0135	0.5	15
W	0747	2.9	88
	1342	0.8	24
	1948	3.0	91

MARCH

Day	Time	Height ft	Height cm
1	0211	0.5	15
Th	0839	2.9	88
	1435	1.1	34
	2025	2.7	82
2	0253	0.6	18
F	0939	2.9	88
	1542	1.4	43
	2107	2.4	73
3	0339	0.6	18
Sa	1055	2.9	88
	1716	1.6	49
	2159	2.1	64
4	0442	0.7	21
Su	1227	2.9	88
	1927	1.6	49
	2325	1.9	58
5	0604	0.8	24
M	1354	3.0	91
	2100	1.5	46
6	0121	1.8	55
Tu	0730	0.8	24
	1500	3.2	98
	2156	1.3	40
7	0247	2.0	61
W	0839	0.7	21
	1551	3.4	104
	2238	1.1	34
8	0346	2.2	67
Th	0938	0.6	18
	1635	3.4	104
	2309	1.0	30
9	0435	2.4	73
F	1027	0.6	18
	1711	3.4	104
	2338	0.8	24
10	0516	2.5	76
Sa	1110	0.6	18
	1743	3.4	104
11	0008	0.8	24
Su	0555	2.7	82
	1151	0.7	21
	1815	3.2	98
12	0035	0.7	21
M	0630	2.8	85
	1230	0.8	24
	1842	3.0	91
13	0100	0.7	21
Tu	0706	2.8	85
	1305	1.0	30
	1907	2.8	85
14	0122	0.8	24
W	0747	2.8	85
	1344	1.2	37
	1929	2.6	79
15	0145	0.8	24
Th	0822	2.7	82
	1419	1.4	43
	1947	2.4	73
16	0209	0.9	27
F	0902	2.6	79
	1505	1.6	49
	1956	2.2	67
17	0233	1.0	30
Sa	0954	2.6	79
	1609	1.8	55
	2002	2.0	61
18	0259	1.1	34
Su	1106	2.5	76
19	0344	1.2	37
M	1236	2.5	76
20	0508	1.3	40
Tu	1349	2.7	82
	2151	1.6	49
21	0052	1.7	52
W	0645	1.2	37
	1436	2.8	85
	2145	1.5	46
22	0218	1.8	55
Th	0800	1.1	34
	1513	3.0	91
	2158	1.3	40
23	0308	2.1	64
F	0852	0.9	27
	1546	3.1	94
	2219	1.1	34
24	0352	2.4	73
Sa	0941	0.8	24
	1618	3.3	101
	2244	0.8	24
25	0433	2.7	82
Su	1028	0.7	21
	1652	3.3	101
	2314	0.6	18
26	0515	2.9	88
M	1114	0.6	18
	1726	3.3	101
	2345	0.4	12
27	0558	3.2	98
Tu	1201	0.7	21
	1803	3.2	98
28	0018	0.3	9
W	0643	3.3	101
	1251	0.8	24
	1839	3.0	91
29	0056	0.3	9
Th	0733	3.4	104
	1344	1.0	30
	1920	2.7	82
30	0136	0.4	12
F	0827	3.4	104
	1446	1.2	37
	2003	2.4	73
31	0219	0.5	15
Sa	0930	3.3	101
	1603	1.4	43
	2051	2.1	64

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0312	0.7	21	16 M	0209	1.1	34
	1042	3.2	98		1022	2.8	85
	1746	1.5	46				
	2204	1.9	58				
2 M	0421	0.9	27	17 Tu	0251	1.2	37
	1209	3.1	94		1130	2.7	82
	1931	1.4	43				
3 Tu	0002	1.8	55	18 W	0405	1.3	40
	0550	1.0	30		1232	2.8	85
	1327	3.2	98		2026	1.5	46
	2044	1.2	37				
4 W	0146	1.9	58	19 Th	0035	1.7	52
	0719	1.0	30		0548	1.3	40
	1431	3.2	98		1325	2.9	88
	2127	1.1	34		2039	1.3	40
5 Th	0257	2.1	64	20 F	0154	1.9	58
	0831	1.0	30		0711	1.3	40
	1519	3.2	98		1408	2.9	88
	2202	0.9	27		2058	1.3	34
6 F	0347	2.4	73	21 Sa	0244	2.3	70
	0927	0.9	27		0818	1.2	37
	1601	3.2	98		1447	3.0	91
	2235	0.8	24		2124	0.8	24
7 Sa	0429	2.6	79	22 Su	0330	2.6	79
	1015	0.9	27		0914	1.1	34
	1634	3.1	94		1526	3.1	94
	2259	0.7	21		2153	0.6	18
8 Su	0504	2.8	85	23 M	0412	3.0	91
	1059	1.0	30		1009	1.0	30
	1706	3.0	91		1607	3.0	91
	2324	0.7	21		2228	0.3	9
9 M	0540	2.9	88	24 Tu	0457	3.3	101
	1138	1.0	30		1100	0.9	27
	1731	2.8	85		1645	3.0	91
	2347	0.7	21		2304	0.2	6
10 Tu	0615	3.0	91	25 W	0545	3.5	107
	1219	1.1	34		1153	0.9	27
	1800	2.6	79		1727	2.8	85
					2344	0.1	3
11 W	0010	0.7	21	26 Th	0631	3.7	113
	0647	3.1	94		1253	1.0	30
	1255	1.3	40		1813	2.6	79
	1821	2.5	76				
12 Th	0031	0.7	21	27 F	0026	0.1	3
	0722	3.0	91		0724	3.7	113
	1337	1.4	43		1353	1.1	34
	1843	2.3	70		1858	2.4	73
13 F	0055	0.8	24	28 Sa	0109	0.2	6
	0757	3.0	91		0819	3.7	113
	1421	1.6	49		1502	1.2	37
	1902	2.1	64		1952	2.2	67
14 Sa	0117	0.9	27	29 Su	0201	0.4	12
	0838	2.9	88		0929	3.5	107
	1512	1.7	52		1618	1.3	40
	1917	2.0	61		2057	1.9	58
15 Su	0140	1.0	30	30 M	0255	0.7	21
	0925	2.8	85		1029	3.4	104
	1637	1.7	52		1747	1.3	40
	1918	1.8	55		2229	1.8	55

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0407	0.9	27	16 W	0231	1.1	34
	1141	3.3	101		1037	2.9	88
	1906	1.2	37		1827	1.4	43
					2218	1.6	49
2 W	0015	1.8	55	17 Th	0336	1.2	37
	0533	1.1	34		1123	2.9	88
	1248	3.2	98		1856	1.3	40
	2002	1.0	30				
3 Th	0143	2.0	61	18 F	0001	1.8	55
	0656	1.2	37		0459	1.3	40
	1345	3.1	94		1210	2.9	88
	2047	0.9	27		1924	1.1	34
4 F	0246	2.3	70	19 Sa	0119	2.0	61
	0812	1.3	40		0625	1.4	43
	1434	3.0	91		1258	2.8	85
	2121	0.8	24		1956	0.8	24
5 Sa	0334	2.5	76	20 Su	0215	2.4	73
	0911	1.3	40		0744	1.4	43
	1513	2.9	88		1346	2.8	85
	2150	0.7	21		2031	0.6	18
6 Su	0417	2.7	82	21 M	0306	2.8	85
	1004	1.3	40		0852	1.3	40
	1548	2.7	82		1434	2.8	85
	2214	0.6	18		2109	0.3	9
7 M	0452	2.9	88	22 Tu	0356	3.1	94
	1049	1.3	40		0956	1.2	37
	1620	2.6	79		1521	2.7	82
	2238	0.6	18		2150	0.1	3
8 Tu	0524	3.1	94	23 W	0445	3.5	107
	1133	1.3	40		1057	1.2	37
	1649	2.4	73		1610	2.6	79
	2303	0.6	18		2233	0.0	0
9 W	0559	3.2	98	24 Th	0534	3.7	113
	1215	1.4	43		1155	1.1	34
	1714	2.3	70		1702	2.5	76
	2328	0.6	18		2319	-0.1	-3
10 Th	0631	3.2	98	25 F	0626	3.8	116
	1257	1.4	43		1255	1.1	34
	1742	2.1	64		1754	2.3	70
	2353	0.6	18				
11 F	0707	3.2	98	26 Sa	0006	0.0	0
	1344	1.5	46		0718	3.9	119
	1807	2.0	61		1358	1.1	34
					1847	2.2	67
12 Sa	0018	0.7	21	27 Su	0055	0.1	3
	0742	3.2	98		0814	3.8	116
	1433	1.5	46		1503	1.1	34
	1833	1.9	58		1950	2.0	61
13 Su	0045	0.7	21	28 M	0148	0.4	12
	0821	3.1	94		0907	3.7	113
	1530	1.6	49		1609	1.1	34
	1858	1.8	55		2101	1.9	58
14 M	0114	0.8	24	29 Tu	0243	0.6	18
	0903	3.0	91		1005	3.5	107
	1636	1.6	49		1718	1.0	30
	1933	1.7	52		2224	1.8	55
15 Tu	0145	1.0	30	30 W	0349	0.9	27
	0947	3.0	91		1103	3.3	101
	1742	1.5	46		1820	0.9	27
	2035	1.6	49		2352	1.9	58
				31 Th	0501	1.2	37
					1159	3.1	94
					1911	0.9	27

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0117	2.1	64	16 Sa	0424	1.3	40
	0624	1.4	43		1109	2.8	85
	1253	2.9	88		1818	0.8	24
	1956	0.8	24				
2 Sa	0223	2.3	70	17 Su	0044	2.2	67
	0743	1.5	46		0549	1.5	46
	1338	2.7	82		1158	2.7	82
	2031	0.7	21		1859	0.6	18
3 Su	0316	2.5	76	18 M	0150	2.5	76
	0852	1.5	46		0719	1.5	46
	1420	2.5	76		1251	2.5	76
	2101	0.6	18		1945	0.4	12
4 M	0358	2.7	82	19 Tu	0249	2.8	85
	0953	1.5	46		0843	1.5	46
	1457	2.3	70		1349	2.4	73
	2129	0.6	18		2034	0.2	6
5 Tu	0437	2.9	88	20 W	0345	3.2	98
	1047	1.5	46		0956	1.4	43
	1532	2.2	67		1449	2.3	70
	2158	0.5	15		2124	0.0	0
6 W	0509	3.1	94	21 Th	0436	3.5	107
	1134	1.5	46		1059	1.3	40
	1606	2.1	64		1548	2.3	70
	2225	0.5	15		2213	-0.1	-3
7 Th	0544	3.2	98	22 F	0528	3.7	113
	1217	1.5	46		1200	1.1	34
	1641	2.0	61		1646	2.2	67
	2257	0.5	15		2303	-0.1	-3
8 F	0619	3.3	101	23 Sa	0618	3.8	116
	1302	1.4	43		1257	1.0	30
	1717	1.9	58		1746	2.1	64
	2326	0.5	15		2354	-0.1	-3
9 Sa	0655	3.3	101	24 Su	0708	3.8	116
	1344	1.4	43		1351	1.0	30
	1752	1.8	55		1844	2.1	64
	2357	0.5	15				
10 Su	0730	3.3	101	25 M	0044	0.1	3
	1427	1.4	43		0757	3.8	116
	1827	1.8	55		1446	0.9	27
					1945	2.0	61
11 M	0029	0.6	18	26 Tu	0135	0.3	9
	0805	3.2	98		0846	3.6	110
	1512	1.4	43		1539	0.9	27
	1907	1.7	52		2048	2.0	61
12 Tu	0105	0.7	21	27 W	0227	0.6	18
	0840	3.2	98		0931	3.4	104
	1554	1.4	43		1629	0.8	24
	1953	1.7	52		2157	1.9	58
13 W	0140	0.8	24	28 Th	0323	0.9	27
	0914	3.1	94		1018	3.1	94
	1629	1.3	40		1721	0.8	24
	2053	1.7	52		2315	2.0	61
14 Th	0225	1.0	30	29 F	0425	1.2	37
	0949	3.0	91		1105	2.8	85
	1704	1.2	37		1810	0.8	24
	2207	1.7	52				
15 F	0315	1.1	34	30 Sa	0035	2.1	64
	1028	2.9	88		0540	1.5	46
	1743	1.0	30		1147	2.5	76
	2325	1.9	58		1855	0.8	24

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CALLAO, PERU, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0151	2.3	70	16 M	0012	2.3	70
	0707	1.6	49		0538	1.5	46
	1232	2.3	70		1109	2.4	73
	1936	0.7	21		1814	0.5	15
2 M	0251	2.5	76	17 Tu	0131	2.6	79
	0841	1.7	52		0720	1.6	49
	1318	2.1	64		1211	2.2	67
	2012	0.7	21		1911	0.3	9
3 Tu	0342	2.6	79	18 W	0239	2.9	88
	0954	1.6	49		0855	1.5	46
	1407	2.0	61		1327	2.1	64
	2049	0.6	18		2010	0.2	6
4 W	0419	2.8	85	19 Th	0339	3.2	98
	1051	1.5	46		1008	1.3	40
	1452	1.9	58		1438	2.0	61
	2124	0.5	15		2109	0.1	3
5 Th	0453	3.0	91	20 F	0431	3.4	104
	1133	1.5	46		1104	1.2	37
	1541	1.8	55		1545	2.0	61
	2201	0.5	15		2204	0.0	0
6 F	0528	3.1	94	21 Sa	0520	3.6	110
	1210	1.4	43		1156	1.0	30
	1623	1.8	55		1648	2.1	64
	2235	0.4	12		2257	-0.1	-3
7 Sa	0600	3.2	98	22 Su	0607	3.7	113
	1247	1.3	40		1244	0.8	24
	1704	1.8	55		1744	2.1	64
	2310	0.4	12		2345	0.0	0
8 Su	0633	3.3	101	23 M	0650	3.7	113
	1318	1.2	37		1327	0.7	21
	1743	1.8	55		1838	2.1	64
	2345	0.4	12				
9 M	0705	3.3	101	24 Tu	0034	0.1	3
	1353	1.2	37		0732	3.5	107
	1825	1.8	55		1409	0.7	21
					1932	2.1	64
10 Tu	0021	0.4	12	25 W	0123	0.3	9
	0737	3.3	101		0813	3.3	101
	1422	1.1	34		1451	0.7	21
	1904	1.8	55		2026	2.1	64
11 W	0056	0.5	15	26 Th	0209	0.6	18
	0807	3.2	98		0851	3.1	94
	1454	1.1	34		1533	0.7	21
	1950	1.9	58		2123	2.1	64
12 Th	0135	0.7	21	27 F	0254	0.9	27
	0835	3.1	94		0926	2.8	85
	1525	1.0	30		1615	0.7	21
	2043	1.9	58		2224	2.1	64
13 F	0217	0.8	24	28 Sa	0347	1.2	37
	0907	2.9	88		1002	2.4	73
	1600	0.9	27		1657	0.8	24
	2143	2.0	61		2340	2.1	64
14 Sa	0307	1.1	34	29 Su	0500	1.5	46
	0941	2.8	85		1032	2.2	67
	1637	0.8	24		1743	0.8	24
	2256	2.1	64				
15 Su	0410	1.3	40	30 M	0106	2.2	67
	1020	2.6	79		0642	1.7	52
	1722	0.6	18		1109	1.9	58
					1829	0.8	24
				31 Tu	0221	2.3	70
					0851	1.7	52
					1208	1.8	55
					1922	0.8	24

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0314	2.5	76	16 Th	0234	2.9	88
	1012	1.5	46		0921	1.3	40
	1327	1.7	52		1335	1.7	52
	2012	0.7	21		2005	0.3	9
2 Th	0356	2.7	82	17 F	0332	3.1	94
	1049	1.4	43		1015	1.1	34
	1436	1.7	52		1458	1.8	55
	2057	0.6	18		2107	0.2	6
3 F	0430	2.9	88	18 Sa	0422	3.3	101
	1117	1.3	40		1058	0.9	27
	1529	1.7	52		1558	2.0	61
	2140	0.5	15		2203	0.1	3
4 Sa	0502	3.0	91	19 Su	0504	3.4	104
	1142	1.2	37		1137	0.7	21
	1614	1.8	55		1652	2.1	64
	2219	0.4	12		2251	0.0	0
5 Su	0531	3.1	94	20 M	0545	3.4	104
	1207	1.1	34		1215	0.6	18
	1654	1.9	58		1740	2.2	67
	2255	0.3	9		2340	0.1	3
6 M	0559	3.2	98	21 Tu	0623	3.3	101
	1233	1.0	30		1251	0.5	15
	1735	2.0	61		1827	2.3	70
	2330	0.3	9				
7 Tu	0631	3.2	98	22 W	0022	0.2	6
	1301	0.9	27		0659	3.2	98
	1812	2.1	64		1326	0.5	15
					1913	2.4	73
8 W	0009	0.3	9	23 Th	0108	0.4	12
	0659	3.2	98		0733	2.9	88
	1329	0.8	24		1358	0.5	15
	1854	2.1	64		1957	2.3	70
9 Th	0047	0.4	12	24 F	0148	0.7	21
	0729	3.1	94		0803	2.6	79
	1358	0.7	21		1430	0.6	18
	1936	2.2	67		2045	2.3	70
10 F	0126	0.6	18	25 Sa	0233	1.0	30
	0755	2.9	88		0830	2.3	70
	1430	0.6	18		1502	0.6	18
	2025	2.3	70		2138	2.2	67
11 Sa	0211	0.8	24	26 Su	0323	1.3	40
	0827	2.7	82		0854	2.1	64
	1502	0.5	15		1534	0.7	21
	2121	2.3	70		2237	2.2	67
12 Su	0302	1.1	34	27 M	0429	1.5	46
	0902	2.5	76		0914	1.8	55
	1544	0.5	15		1613	0.8	24
	2229	2.3	70				
13 M	0413	1.3	40	28 Tu	0003	2.2	67
	0941	2.2	67		0656	1.5	46
	1636	0.5	15		0915	1.6	49
	2353	2.4	73		1706	0.9	27
14 Tu	0554	1.5	46	29 W	0136	2.2	67
	1037	2.0	61		1819	0.9	27
	1736	0.5	15				
15 W	0119	2.6	79	30 Th	0237	2.4	73
	0751	1.5	46		1011	1.3	40
	1159	1.8	55		1319	1.4	43
	1853	0.4	12		1931	0.8	24
				31 F	0319	2.6	79
					1023	1.2	37
					1434	1.5	46
					2030	0.7	21

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0350	2.7	82	16 Su	0401	3.1	94
	1038	1.1	34		1036	0.6	18
	1522	1.7	52		1606	2.1	64
	2115	0.5	15		2158	0.3	9
2 Su	0421	2.9	88	17 M	0441	3.1	94
	1056	0.9	27		1108	0.5	15
	1601	1.9	58		1652	2.3	70
	2154	0.4	12		2246	0.3	9
3 M	0449	3.0	91	18 Tu	0516	3.0	91
	1118	0.8	24		1137	0.4	12
	1639	2.0	61		1732	2.4	73
	2233	0.3	9		2329	0.3	9
4 Tu	0516	3.0	91	19 W	0548	2.9	88
	1143	0.6	18		1208	0.3	9
	1715	2.2	67		1813	2.6	79
	2312	0.3	9				
5 W	0547	3.0	91	20 Th	0011	0.5	15
	1208	0.5	15		0620	2.7	82
	1754	2.4	73		1234	0.3	9
	2353	0.3	9		1849	2.6	79
6 Th	0616	3.0	91	21 F	0052	0.6	18
	1236	0.4	12		0648	2.4	73
	1836	2.5	76		1302	0.4	12
					1931	2.6	79
7 F	0035	0.4	12	22 Sa	0134	0.9	27
	0647	2.8	85		0713	2.2	67
	1308	0.3	9		1328	0.4	12
	1921	2.6	79		2010	2.5	76
8 Sa	0118	0.6	18	23 Su	0219	1.1	34
	0719	2.6	79		0734	2.0	61
	1340	0.2	6		1353	0.5	15
	2009	2.7	82		2055	2.4	73
9 Su	0211	0.8	24	24 M	0310	1.3	40
	0755	2.4	73		0750	1.7	52
	1419	0.3	9		1417	0.7	21
	2105	2.6	79		2148	2.3	70
10 M	0312	1.1	34	25 Tu	0430	1.5	46
	0833	2.1	64		0754	1.6	49
	1502	0.3	9		1446	0.8	24
	2215	2.6	79		2300	2.2	67
11 Tu	0437	1.3	40	26 W	1533	0.9	27
	0915	1.8	55				
	1600	0.4	12				
	2340	2.6	79				
12 W	0637	1.3	40	27 Th	0029	2.2	67
	1038	1.6	49		1702	1.0	30
	1717	0.5	15				
13 Th	0107	2.7	82	28 F	0135	2.3	70
	0820	1.2	37		0938	1.2	37
	1235	1.5	46		1322	1.3	40
	1843	0.5	15		1841	1.0	30
14 F	0219	2.9	88	29 Sa	0221	2.5	76
	0919	1.0	30		0934	1.0	30
	1412	1.6	49		1423	1.5	46
	2003	0.4	12		1947	0.8	24
15 Sa	0313	3.0	91	30 Su	0257	2.6	79
	1001	0.8	24		0945	0.9	27
	1516	1.9	58		1505	1.7	52
	2105	0.3	9		2041	0.7	21

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0327	2.7	82	16 Tu	0404	2.8	85
	1002	0.7	21		1032	0.3	9
	1542	2.0	61		1646	2.5	76
	2126	0.6	18		2237	0.6	18
2 Tu	0357	2.8	85	17 W	0439	2.6	79
	1022	0.5	15		1059	0.2	6
	1617	2.3	70		1723	2.7	82
	2210	0.5	15		2323	0.7	21
3 W	0429	2.8	85	18 Th	0511	2.4	73
	1050	0.3	9		1123	0.2	6
	1656	2.6	79		1758	2.8	85
	2254	0.4	12				
4 Th	0501	2.8	85	19 F	0004	0.8	24
	1119	0.1	3		0536	2.2	67
	1737	2.8	85		1149	0.2	6
	2341	0.5	15		1834	2.8	85
5 F	0536	2.7	82	20 Sa	0046	0.9	27
	1151	0.0	0		0605	2.1	64
	1820	3.0	91		1214	0.2	6
					1909	2.8	85
6 Sa	0027	0.6	18	21 Su	0130	1.0	30
	0609	2.5	76		0627	1.9	58
	1226	-0.1	-3		1239	0.3	9
	1905	3.0	91		1948	2.7	82
7 Su	0118	0.7	21	22 M	0217	1.2	37
	0647	2.3	70		0649	1.7	52
	1303	0.0	0		1301	0.5	15
	1957	3.0	91		2030	2.6	79
8 M	0218	0.9	27	23 Tu	0319	1.3	40
	0729	2.0	61		0700	1.5	46
	1345	0.1	3		1326	0.6	18
	2056	3.0	91		2115	2.5	76
9 Tu	0332	1.1	34	24 W	0449	1.3	40
	0816	1.8	55		0700	1.4	43
	1434	0.2	6		1355	0.7	21
	2205	2.9	88		2213	2.4	73
10 W	0506	1.1	34	25 Th	1433	0.8	24
	0925	1.5	46		2312	2.4	73
	1539	0.4	12				
	2327	2.8	85				
11 Th	0648	1.0	30	26 F	1539	1.0	30
	1117	1.4	43				
	1705	0.6	18				
12 F	0045	2.8	85	27 Sa	0016	2.4	73
	0804	0.9	27		0819	1.1	34
	1306	1.5	46		1251	1.3	40
	1835	0.7	21		1725	1.1	34
13 Sa	0151	2.9	88	28 Su	0106	2.4	73
	0853	0.7	21		0828	0.9	27
	1424	1.7	52		1354	1.5	46
	1957	0.6	18		1856	1.0	30
14 Su	0244	2.9	88	29 M	0147	2.5	76
	0932	0.5	15		0843	0.7	21
	1520	2.0	61		1434	1.8	55
	2100	0.6	18		2000	0.9	27
15 M	0329	2.8	85	30 Tu	0223	2.6	79
	1004	0.4	12		0904	0.5	15
	1606	2.3	70		1516	2.2	67
	2153	0.6	18		2057	0.8	24
				31 W	0301	2.6	79
					0932	0.2	6
					1557	2.5	76
					2148	0.8	24

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0338	2.6	79	16 F	0432	2.1	64
	1004	0.0	0		1046	0.2	6
	1637	2.9	88		1746	2.9	88
	2240	0.7	21				
2 F	0417	2.5	76	17 Sa	0005	1.1	34
	1038	-0.2	-6		0501	1.9	58
	1723	3.1	94		1111	0.2	6
	2329	0.7	21		1821	3.0	91
3 Sa	0457	2.4	73	18 Su	0049	1.1	34
	1115	-0.3	-9		0529	1.8	55
	1808	3.3	101		1140	0.2	6
					1857	3.0	91
4 Su	0025	0.7	21	19 M	0134	1.2	37
	0539	2.2	67		0554	1.7	52
	1155	-0.3	-9		1207	0.3	9
	1857	3.4	104		1932	2.9	88
5 M	0122	0.8	24	20 Tu	0225	1.2	37
	0625	2.0	61		0623	1.6	49
	1240	-0.2	-6		1235	0.4	12
	1949	3.4	104		2011	2.9	88
6 Tu	0227	0.9	27	21 W	0317	1.3	40
	0718	1.8	55		0655	1.5	46
	1326	0.0	0		1302	0.5	15
	2048	3.3	101		2050	2.8	85
7 W	0341	0.9	27	22 Th	0423	1.3	40
	0819	1.6	49		0730	1.4	43
	1421	0.2	6		1332	0.7	21
	2154	3.2	98		2131	2.7	82
8 Th	0504	0.9	27	23 F	0525	1.2	37
	0943	1.5	46		0815	1.3	40
	1527	0.5	15		1407	0.8	24
	2300	3.0	91		2217	2.6	79
9 F	0623	0.8	24	24 Sa	0616	1.1	34
	1129	1.5	46		1003	1.3	40
	1646	0.7	21		1503	1.0	30
					2259	2.6	79
10 Sa	0009	2.9	88	25 Su	0643	1.0	30
	0727	0.7	21		1146	1.4	43
	1306	1.7	52		1622	1.1	34
	1819	0.9	27		2345	2.5	76
11 Su	0110	2.8	85	26 M	0709	0.8	24
	0814	0.5	15		1306	1.7	52
	1416	1.9	58		1755	1.2	37
	1939	0.9	27				
12 M	0204	2.7	82	27 Tu	0031	2.5	76
	0852	0.4	12		0736	0.6	18
	1512	2.2	67		1405	2.0	61
	2048	1.0	30		1918	1.2	37
13 Tu	0246	2.5	76	28 W	0117	2.4	73
	0926	0.3	9		0808	0.4	12
	1556	2.5	76		1451	2.4	73
	2144	1.0	30		2028	1.2	37
14 W	0325	2.4	73	29 Th	0205	2.4	73
	0953	0.2	6		0845	0.1	3
	1635	2.7	82		1538	2.8	85
	2235	1.0	30		2133	1.1	34
15 Th	0358	2.2	67	30 F	0251	2.3	70
	1021	0.2	6		0924	-0.1	-3
	1711	2.8	85		1622	3.1	94
	2321	1.0	30		2233	1.0	30

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0340	2.3	70	16 Su	0010	1.2	37
	1006	-0.2	-6		0435	1.8	55
	1711	3.4	104		1047	0.3	9
	2329	0.9	27		1810	3.1	94
2 Su	0432	2.2	67	17 M	0052	1.2	37
	1051	-0.3	-9		0510	1.7	52
	1759	3.6	110		1119	0.3	9
					1845	3.1	94
3 M	0029	0.9	27	18 Tu	0131	1.2	37
	0524	2.1	64		0546	1.7	52
	1138	-0.3	-9		1151	0.3	9
	1851	3.7	113		1917	3.1	94
4 Tu	0124	0.8	24	19 W	0210	1.2	37
	0616	2.0	61		0622	1.6	49
	1226	-0.2	-6		1223	0.4	12
	1941	3.6	110		1950	3.1	94
5 W	0227	0.8	24	20 Th	0248	1.2	37
	0716	1.8	55		0701	1.6	49
	1317	0.0	0		1252	0.5	15
	2035	3.5	107		2024	3.0	91
6 Th	0329	0.8	24	21 F	0327	1.2	37
	0822	1.7	52		0740	1.6	49
	1414	0.2	6		1324	0.6	18
	2131	3.4	104		2054	2.9	88
7 F	0435	0.8	24	22 Sa	0403	1.1	34
	0939	1.7	52		0830	1.6	49
	1512	0.5	15		1400	0.8	24
	2229	3.2	98		2125	2.8	85
8 Sa	0537	0.7	21	23 Su	0434	1.1	34
	1108	1.7	52		0929	1.6	49
	1624	0.8	24		1444	1.0	30
	2325	2.9	88		2157	2.7	82
9 Su	0636	0.6	18	24 M	0509	0.9	27
	1240	1.8	55		1048	1.7	52
	1747	1.1	34		1543	1.2	37
					2233	2.6	79
10 M	0019	2.7	82	25 Tu	0548	0.8	24
	0725	0.5	15		1210	1.9	58
	1356	2.1	64		1706	1.4	43
	1913	1.3	40		2318	2.4	73
11 Tu	0112	2.4	73	26 W	0629	0.6	18
	0807	0.5	15		1328	2.2	67
	1500	2.3	70		1842	1.5	46
	2036	1.3	40				
12 W	0200	2.2	67	27 Th	0010	2.3	70
	0842	0.4	12		0714	0.4	12
	1545	2.6	79		1428	2.6	79
	2142	1.3	40		2013	1.5	46
13 Th	0239	2.1	64	28 F	0113	2.2	67
	0917	0.4	12		0807	0.2	6
	1627	2.8	85		1521	2.9	88
	2243	1.3	40		2133	1.4	43
14 F	0321	1.9	58	29 Sa	0215	2.1	64
	0946	0.3	9		0856	0.0	0
	1704	2.9	88		1613	3.3	101
	2328	1.3	40		2235	1.2	37
15 Sa	0400	1.9	58	30 Su	0321	2.1	64
	1019	0.3	9		0946	-0.1	-3
	1738	3.0	91		1705	3.5	107
					2334	1.1	34
				31 M	0423	2.1	64
					1039	-0.2	-6
					1754	3.7	113

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

TALARA, PERU, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0033	0.8	24	16 Tu	0122	0.6	18
	0621	4.5	137		0717	4.4	134
	1232	0.0	0		1317	0.5	15
	1859	5.2	158		1943	5.0	152
2 Tu	0115	0.7	21	17 W	0202	0.8	24
	0707	4.4	134		0759	4.1	125
	1314	0.2	6		1357	1.0	30
	1941	5.1	155		2018	4.7	143
3 W	0200	0.7	21	18 Th	0245	1.0	30
	0757	4.3	131		0845	3.8	116
	1402	0.5	15		1436	1.4	43
	2026	5.0	152		2058	4.4	134
4 Th	0252	0.7	21	19 F	0335	1.2	37
	0855	4.2	128		0944	3.6	110
	1455	0.9	27		1526	1.8	55
	2119	4.8	146		2143	4.1	125
5 F	0351	0.7	21	20 Sa	0432	1.3	40
	1004	4.1	125		1100	3.4	104
	1600	1.2	37		1633	2.1	64
	2219	4.6	140		2244	3.9	119
6 Sa	0457	0.6	18	21 Su	0540	1.3	40
	1122	4.1	125		1225	3.5	107
	1716	1.4	43		1759	2.3	70
	2326	4.5	137		2356	3.8	116
7 Su	0607	0.4	12	22 M	0649	1.1	34
	1241	4.3	131		1334	3.8	116
	1836	1.4	43		1921	2.1	64
8 M	0037	4.5	137	23 Tu	0103	3.9	119
	0716	0.2	6		0742	0.9	27
	1352	4.6	140		1427	4.2	128
	1950	1.3	40		2019	1.9	58
9 Tu	0143	4.7	143	24 W	0158	4.0	122
	0815	-0.1	-3		0830	0.6	18
	1451	5.0	152		1509	4.6	140
	2051	1.0	30		2107	1.5	46
10 W	0243	4.8	146	25 Th	0248	4.3	131
	0910	-0.4	-12		0910	0.3	9
	1542	5.4	165		1544	5.0	152
	2145	0.8	24		2145	1.2	37
11 Th	0336	5.0	152	26 F	0329	4.6	140
	0957	-0.6	-18		0947	0.0	0
	1628	5.6	171		1616	5.3	162
	2234	0.6	18		2221	0.9	27
12 F	0425	5.1	155	27 Sa	0410	4.8	146
	1042	-0.6	-18		1024	-0.2	-6
	1710	5.7	174		1650	5.6	171
	2318	0.5	15		2256	0.6	18
13 Sa	0510	5.1	155	28 Su	0447	5.0	152
	1124	-0.5	-15		1059	-0.3	-9
	1752	5.7	174		1724	5.7	174
					2333	0.4	12
14 Su	0001	0.4	12	29 M	0526	5.1	155
	0553	4.9	149		1137	-0.3	-9
	1203	-0.3	-9		1758	5.8	177
	1830	5.6	171				
15 M	0043	0.5	15	30 Tu	0009	0.2	6
	0635	4.7	143		0606	5.1	155
	1242	0.1	3		1214	-0.2	-6
	1907	5.3	162		1834	5.7	174
				31 W	0048	0.2	6
					0648	5.0	152
					1255	0.1	3
					1912	5.5	168

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0131	0.3	9	16 F	0149	0.9	27
	0736	4.8	146		0757	4.1	125
	1339	0.5	15		1348	1.5	46
	1956	5.2	158		1957	4.4	134
2 F	0220	0.4	12	17 Sa	0229	1.1	34
	0831	4.5	137		0845	3.8	116
	1429	1.0	30		1428	1.9	58
	2045	4.9	149		2034	4.1	125
3 Sa	0319	0.6	18	18 Su	0321	1.4	43
	0940	4.2	128		0953	3.5	107
	1535	1.5	46		1530	2.3	70
	2146	4.5	137		2131	3.7	113
4 Su	0428	0.8	24	19 M	0432	1.5	46
	1104	4.1	125		1130	3.5	107
	1700	1.8	55		1714	2.5	76
	2304	4.3	131		2301	3.6	110
5 M	0551	0.7	21	20 Tu	0559	1.4	43
	1226	4.3	131		1257	3.8	116
	1836	1.8	55		1857	2.3	70
6 Tu	0032	4.2	128	21 W	0031	3.6	110
	0708	0.5	15		0708	1.2	37
	1351	4.6	140		1355	4.2	128
	1955	1.5	46		1958	1.9	58
7 W	0145	4.4	134	22 Th	0137	4.0	122
	0811	0.2	6		0759	0.8	24
	1448	5.0	152		1435	4.7	143
	2055	1.1	34		2040	1.4	43
8 Th	0243	4.7	143	23 F	0227	4.4	134
	0904	-0.1	-3		0841	0.4	12
	1533	5.4	165		1510	5.1	155
	2139	0.8	24		2117	1.0	30
9 F	0333	5.0	152	24 Sa	0310	4.8	146
	0948	-0.2	-6		0922	0.1	3
	1614	5.6	171		1545	5.5	168
	2221	0.5	15		2152	0.5	15
10 Sa	0415	5.1	155	25 Su	0350	5.1	155
	1027	-0.3	-9		0959	-0.2	-6
	1650	5.8	177		1618	5.8	177
	2300	0.3	9		2228	0.1	3
11 Su	0455	5.2	158	26 M	0428	5.4	165
	1105	-0.2	-6		1036	-0.4	-12
	1724	5.8	177		1654	6.0	183
	2334	0.3	9		2305	-0.1	-3
12 M	0533	5.1	155	27 Tu	0508	5.6	171
	1137	0.0	0		1115	-0.3	-9
	1755	5.6	171		1729	6.0	183
					2342	-0.3	-9
13 Tu	0009	0.3	9	28 W	0550	5.6	171
	0606	5.0	152		1154	-0.2	-6
	1211	0.3	9		1806	5.9	180
	1827	5.4	165				
14 W	0043	0.4	12				
	0643	4.7	143				
	1241	0.6	18				
	1856	5.1	155				
15 Th	0115	0.6	18				
	0717	4.4	134				
	1314	1.0	30				
	1925	4.8	146				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0022	-0.2	-6	16 F	0032	0.5	15
	0632	5.4	165		0646	4.6	140
	1236	0.2	6		1240	1.2	37
	1846	5.6	171		1843	4.7	143
2 F	0106	-0.1	-3	17 Sa	0106	0.7	21
	0720	5.1	155		0723	4.3	131
	1323	0.7	21		1314	1.6	49
	1931	5.2	158		1915	4.3	131
3 Sa	0154	0.2	6	18 Su	0143	1.0	30
	0816	4.7	143		0805	4.0	122
	1416	1.2	37		1356	1.9	58
	2021	4.7	143		1951	4.0	122
4 Su	0253	0.6	18	19 M	0229	1.3	40
	0927	4.4	134		0906	3.7	113
	1527	1.7	52		1458	2.3	70
	2130	4.2	128		2045	3.6	110
5 M	0412	0.9	27	20 Tu	0335	1.5	46
	1059	4.2	128		1034	3.7	113
	1704	1.9	58		1639	2.4	73
	2301	4.0	122		2214	3.4	104
6 Tu	0540	0.9	27	21 W	0503	1.5	46
	1231	4.3	131		1203	3.9	119
	1844	1.8	55		1815	2.1	64
					2356	3.5	107
7 W	0034	4.1	125	22 Th	0621	1.3	40
	0700	0.8	24		1305	4.3	131
	1340	4.7	143		1918	1.7	52
	1953	1.4	43				
8 Th	0147	4.3	131	23 F	0106	3.9	119
	0803	0.5	15		0721	0.9	27
	1432	5.0	152		1350	4.7	143
	2042	1.0	30		2003	1.1	34
9 F	0238	4.7	143	24 Sa	0158	4.4	134
	0851	0.2	6		0806	0.5	15
	1512	5.3	162		1430	5.1	155
	2123	0.6	18		2041	0.6	18
10 Sa	0321	4.9	149	25 Su	0243	4.9	149
	0929	0.1	3		0850	0.2	6
	1549	5.5	168		1507	5.5	168
	2159	0.3	9		2120	0.1	3
11 Su	0400	5.1	155	26 M	0325	5.3	162
	1005	0.1	3		0931	-0.1	-3
	1620	5.6	171		1544	5.8	177
	2231	0.2	6		2157	-0.3	-9
12 M	0435	5.2	158	27 Tu	0406	5.7	174
	1037	0.1	3		1011	-0.2	-6
	1650	5.6	171		1621	6.0	183
	2303	0.1	3		2236	-0.6	-18
13 Tu	0509	5.2	158	28 W	0448	5.8	177
	1109	0.3	9		1053	-0.2	-6
	1718	5.5	168		1700	5.9	180
	2334	0.1	3		2316	-0.7	-21
14 W	0541	5.1	155	29 Th	0532	5.8	177
	1140	0.5	15		1136	0.0	0
	1747	5.3	162		1740	5.8	177
15 Th	0003	0.3	9	30 F	0001	-0.6	-18
	0611	4.8	146		0619	5.6	171
	1209	0.8	24		1222	0.4	12
	1814	5.0	152		1824	5.4	165
				31 Sa	0046	-0.3	-9
					0709	5.3	162
					1312	0.8	24
					1912	4.9	149

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0138	0.1	3	16 M	0109	0.8	24
	0809	4.9	149		0746	4.2	128
	1413	1.3	40		1344	1.9	58
	2010	4.4	134		1925	3.8	116
2 M	0242	0.6	18	17 Tu	0154	1.1	34
	0921	4.5	137		0842	4.0	122
	1532	1.7	52		1447	2.1	64
	2127	4.0	122		2024	3.5	107
3 Tu	0359	0.9	27	18 W	0255	1.3	40
	1047	4.4	134		0951	4.0	122
	1706	1.7	52		1609	2.0	61
	2259	3.8	116		2146	3.4	104
4 W	0525	1.0	30	19 Th	0412	1.4	43
	1210	4.5	137		1103	4.1	125
	1832	1.5	46		1727	1.8	55
					2315	3.6	110
5 Th	0025	4.0	122	20 F	0528	1.3	40
	0641	0.9	27		1204	4.4	134
	1313	4.7	143		1828	1.3	40
	1932	1.1	34				
6 F	0132	4.3	131	21 Sa	0025	3.9	119
	0737	0.7	21		0633	1.0	30
	1401	4.9	149		1257	4.7	143
	2019	0.7	21		1918	0.8	24
7 Sa	0220	4.6	140	22 Su	0124	4.4	134
	0825	0.6	18		0726	0.7	21
	1440	5.1	155		1342	5.1	155
	2056	0.4	12		2001	0.3	9
8 Su	0302	4.8	146	23 M	0211	4.9	149
	0904	0.5	15		0814	0.4	12
	1515	5.2	158		1427	5.4	165
	2129	0.2	6		2043	-0.2	-6
9 M	0339	5.0	152	24 Tu	0259	5.3	162
	0939	0.5	15		0900	0.2	6
	1545	5.3	162		1507	5.7	174
	2202	0.1	3		2127	-0.6	-18
10 Tu	0412	5.0	152	25 W	0344	5.7	174
	1011	0.6	18		0947	0.1	3
	1614	5.2	158		1551	5.8	177
	2230	0.0	0		2211	-0.8	-24
11 W	0444	5.0	152	26 Th	0431	5.8	177
	1043	0.7	21		1034	0.1	3
	1643	5.1	155		1636	5.7	174
	2302	0.0	0		2256	-0.9	-27
12 Th	0516	5.0	152	27 F	0520	5.8	177
	1113	0.9	27		1122	0.3	9
	1711	4.9	149		1721	5.5	168
	2330	0.1	3		2342	-0.7	-21
13 F	0550	4.8	146	28 Sa	0609	5.6	171
	1145	1.1	34		1214	0.6	18
	1741	4.7	143		1810	5.1	155
14 Sa	0000	0.3	9	29 Su	0032	-0.4	-12
	0624	4.6	140		0704	5.4	165
	1219	1.4	43		1311	0.9	27
	1810	4.4	134		1903	4.7	143
15 Su	0032	0.6	18	30 M	0127	0.0	0
	0701	4.4	134		0803	5.0	152
	1256	1.6	49		1413	1.2	37
	1845	4.1	125		2005	4.3	131

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0229	0 4	12	16 W	0135	0.8	24
	0909	4.8	146		0820	4.4	134
	1530	1.4	43		1434	1.7	52
	2121	3.9	119		2013	3.7	113
2 W	0338	0.8	24	17 Th	0229	1.0	30
	1023	4.6	140		0911	4.4	134
	1650	1.4	43		1534	1.6	49
	2244	3.8	116		2121	3.6	110
3 Th	0453	1.0	30	18 F	0329	1.1	34
	1132	4.6	140		1011	4.4	134
	1800	1.2	37		1639	1.3	40
					2234	3.7	113
4 F	0000	3.9	119	19 Sa	0438	1.1	34
	0605	1.1	34		1108	4.6	140
	1231	4.7	143		1739	1.0	30
	1857	0.9	27		2343	4.0	122
5 Sa	0105	4.1	125	20 Su	0543	1.0	30
	0702	1.1	34		1204	4.8	146
	1319	4.7	143		1834	0.5	15
	1942	0.6	18				
6 Su	0155	4.3	131	21 M	0047	4.4	134
	0750	1.0	30		0644	0.9	27
	1358	4.8	146		1257	5.0	152
	2023	0.4	12		1926	0.1	3
7 M	0238	4.5	137	22 Tu	0142	4.8	146
	0832	1.0	30		0742	0.7	21
	1435	4.8	146		1347	5.2	158
	2057	0.2	6		2014	-0.3	-9
8 Tu	0314	4.7	143	23 W	0235	5.2	158
	0910	1.0	30		0835	0.5	15
	1507	4.9	149		1438	5.4	165
	2130	0.1	3		2103	-0.7	-21
9 W	0351	4.8	146	24 Th	0327	5.5	168
	0945	1.0	30		0929	0.4	12
	1541	4.8	146		1528	5.4	165
	2202	0.0	0		2152	-0.8	-24
10 Th	0424	4.8	146	25 F	0418	5.7	174
	1018	1.1	34		1022	0.4	12
	1612	4.7	143		1617	5.4	165
	2234	0.0	0		2240	-0.9	-27
11 F	0500	4.9	149	26 Sa	0510	5.7	174
	1055	1.2	37		1115	0.5	15
	1644	4.6	140		1707	5.2	158
	2306	0.1	3		2329	-0.7	-21
12 Sa	0534	4.8	146	27 Su	0603	5.7	174
	1131	1.3	40		1209	0.6	18
	1716	4.4	134		1800	5.0	152
	2338	0.2	6				
13 Su	0610	4.7	143	28 M	0021	-0.5	-15
	1210	1.4	43		0656	5.5	168
	1750	4.2	128		1304	0.8	24
					1854	4.6	140
14 M	0014	0.4	12	29 Tu	0115	-0.1	-3
	0648	4.6	140		0749	5.3	162
	1251	1.6	49		1405	0.9	27
	1830	4.0	122		1957	4.3	131
15 Tu	0051	0.6	18	30 W	0210	0.3	9
	0731	4.5	137		0845	5.0	152
	1339	1.7	52		1509	1.0	30
	1916	3.8	116		2101	4.0	122
				31 Th	0307	0.7	21
					0944	4.8	146
					1611	1.1	34
					2210	3.8	116

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0410	1.0	30	16 Sa	0255	0.9	27
	1042	4.6	140		0924	4.7	143
	1714	1.0	30		1554	0.9	27
	2320	3.8	116		2156	3.9	119
2 Sa	0512	1.3	40	17 Su	0356	1.0	30
	1135	4.5	137		1018	4.7	143
	1812	0.9	27		1652	0.7	21
					2305	4.0	122
3 Su	0025	3.9	119	18 M	0502	1.1	34
	0615	1.4	43		1118	4.7	143
	1226	4.4	134		1755	0.4	12
	1902	0.7	21				
4 M	0121	4.0	122	19 Tu	0017	4.3	131
	0708	1.5	46		0610	1.2	37
	1312	4.4	134		1218	4.8	146
	1945	0.5	15		1855	0.1	3
5 Tu	0211	4.2	128	20 W	0122	4.6	140
	0758	1.5	46		0718	1.1	34
	1354	4.4	134		1318	4.9	149
	2025	0.4	12		1951	-0.2	-6
6 W	0254	4.4	134	21 Th	0222	5.0	152
	0844	1.4	43		0820	0.9	27
	1433	4.4	134		1417	5.0	152
	2102	0.2	6		2048	-0.5	-15
7 Th	0333	4.5	137	22 F	0318	5.3	162
	0925	1.4	43		0920	0.7	21
	1512	4.4	134		1513	5.1	155
	2137	0.1	3		2139	-0.7	-21
8 F	0409	4.7	143	23 Sa	0410	5.6	171
	1003	1.3	40		1015	0.6	18
	1550	4.4	134		1606	5.1	155
	2213	0.1	3		2230	-0.8	-24
9 Sa	0447	4.8	146	24 Su	0502	5.7	174
	1043	1.3	40		1108	0.5	15
	1626	4.4	134		1659	5.1	155
	2248	0.1	3		2318	-0.7	-21
10 Su	0523	4.9	149	25 M	0550	5.7	174
	1123	1.3	40		1200	0.5	15
	1704	4.3	131		1750	5.0	152
	2323	0.1	3				
11 M	0558	4.9	149	26 Tu	0006	-0.5	-15
	1200	1.3	40		0637	5.6	171
	1741	4.2	128		1249	0.5	15
	2359	0.2	6		1840	4.7	143
12 Tu	0635	4.9	149	27 W	0054	-0.2	-6
	1242	1.3	40		0723	5.4	165
	1822	4.1	125		1339	0.6	18
					1931	4.4	134
13 W	0037	0.3	9	28 Th	0141	0.2	6
	0712	4.9	149		0809	5.1	155
	1323	1.2	37		1430	0.7	21
	1904	4.0	122		2026	4.1	125
14 Th	0117	0.5	15	29 F	0228	0.7	21
	0752	4.8	146		0855	4.8	146
	1408	1.2	37		1522	0.9	27
	1954	4.0	122		2123	3.9	119
15 F	0202	0.7	21	30 Sa	0319	1.1	34
	0836	4.8	146		0943	4.5	137
	1458	1.1	34		1618	0.9	27
	2052	3.9	119		2227	3.7	113

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

TALARA, PERU, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height ft	Height cm
1 Su	0417	1.5	46
	1033	4.3	131
	1717	1.0	30
	2336	3.6	110
2 M	0518	1.7	52
	1127	4.1	125
	1815	0.9	27
3 Tu	0045	3.7	113
	0624	1.9	58
	1223	4.0	122
	1905	0.8	24
4 W	0143	3.9	119
	0727	1.9	58
	1318	4.0	122
	1955	0.6	18
5 Th	0233	4.1	125
	0822	1.7	52
	1406	4.1	125
	2038	0.4	12
6 F	0315	4.4	134
	0910	1.6	49
	1451	4.2	128
	2117	0.2	6
7 Sa	0353	4.7	143
	0952	1.4	43
	1533	4.3	131
	2155	0.1	3
8 Su	0429	4.9	149
	1030	1.2	37
	1613	4.4	134
	2230	0.0	0
9 M	0503	5.1	155
	1107	1.0	30
	1649	4.4	134
	2306	-0.1	-3
10 Tu	0536	5.2	158
	1144	0.9	27
	1729	4.5	137
	2340	-0.1	-3
11 W	0611	5.2	158
	1220	0.8	24
	1806	4.5	137
12 Th	0016	0.0	0
	0643	5.2	158
	1257	0.7	21
	1848	4.4	134
13 F	0054	0.2	6
	0720	5.1	155
	1336	0.6	18
	1931	4.3	131
14 Sa	0136	0.4	12
	0800	5.0	152
	1421	0.6	18
	2024	4.2	128
15 Su	0224	0.7	21
	0845	4.8	146
	1514	0.6	18
	2124	4.1	125
16 M	0321	1.1	34
	0939	4.6	140
	1616	0.5	15
	2236	4.0	122
17 Tu	0430	1.3	40
	1041	4.5	137
	1725	0.4	12
	2356	4.1	125
18 W	0548	1.4	43
	1154	4.4	134
	1836	0.2	6
19 Th	0113	4.4	134
	0708	1.3	40
	1305	4.5	137
	1940	-0.1	-3
20 F	0217	4.8	146
	0819	1.1	34
	1409	4.7	143
	2038	-0.4	-12
21 Sa	0313	5.2	158
	0917	0.8	24
	1510	4.9	149
	2131	-0.6	-18
22 Su	0402	5.5	168
	1007	0.5	15
	1600	5.0	152
	2219	-0.7	-21
23 M	0447	5.7	174
	1056	0.3	9
	1649	5.1	155
	2303	-0.7	-21
24 Tu	0529	5.7	174
	1139	0.2	6
	1735	5.0	152
	2347	-0.5	-15
25 W	0611	5.6	171
	1223	0.2	6
	1819	4.8	146
26 Th	0026	-0.2	-6
	0648	5.4	165
	1304	0.3	9
	1903	4.6	140
27 F	0107	0.2	6
	0725	5.1	155
	1346	0.5	15
	1946	4.2	128
28 Sa	0144	0.7	21
	0805	4.7	143
	1429	0.7	21
	2034	3.9	119
29 Su	0226	1.2	37
	0844	4.4	134
	1517	0.9	27
	2130	3.6	110
30 M	0314	1.6	49
	0930	4.0	122
	1614	1.1	34
	2240	3.4	104
31 Tu	0420	1.9	58
	1025	3.8	116
	1720	1.1	34

AUGUST

Day	Time	Height ft	Height cm
1 W	0004	3.4	104
	0543	2.1	64
	1135	3.6	110
	1828	1.0	30
2 Th	0118	3.6	110
	0705	2.0	61
	1247	3.6	110
	1926	0.8	24
3 F	0212	4.0	122
	0809	1.8	55
	1347	3.8	116
	2014	0.5	15
4 Sa	0254	4.3	131
	0854	1.4	43
	1435	4.0	122
	2056	0.3	9
5 Su	0328	4.7	143
	0933	1.1	34
	1518	4.3	131
	2133	0.0	0
6 M	0403	5.0	152
	1008	0.8	24
	1555	4.5	137
	2209	-0.2	-6
7 Tu	0435	5.2	158
	1042	0.5	15
	1632	4.7	143
	2242	-0.3	-9
8 W	0505	5.4	165
	1114	0.3	9
	1709	4.8	146
	2318	-0.3	-9
9 Th	0537	5.4	165
	1148	0.1	3
	1746	4.9	149
	2353	-0.2	-6
10 F	0611	5.4	165
	1224	0.1	3
	1827	4.8	146
11 Sa	0032	0.0	0
	0648	5.2	158
	1304	0.1	3
	1909	4.6	140
12 Su	0113	0.3	9
	0728	5.0	152
	1349	0.2	6
	2000	4.4	134
13 M	0200	0.7	21
	0813	4.7	143
	1442	0.3	9
	2102	4.1	125
14 Tu	0258	1.2	37
	0909	4.4	134
	1548	0.5	15
	2221	3.9	119
15 W	0417	1.5	46
	1023	4.1	125
	1706	0.5	15
	2349	4.0	122
16 Th	0549	1.6	49
	1148	4.0	122
	1828	0.4	12
17 F	0110	4.3	131
	0713	1.3	40
	1308	4.2	128
	1937	0.1	3
18 Sa	0212	4.7	143
	0819	0.9	27
	1411	4.5	137
	2033	-0.2	-6
19 Su	0302	5.1	155
	0910	0.5	15
	1504	4.8	146
	2121	-0.5	-15
20 M	0347	5.4	165
	0955	0.2	6
	1551	5.0	152
	2204	-0.6	-18
21 Tu	0424	5.6	171
	1034	-0.1	-3
	1633	5.1	155
	2242	-0.5	-15
22 W	0501	5.6	171
	1112	-0.2	-6
	1714	5.0	152
	2319	-0.4	-12
23 Th	0537	5.4	165
	1147	-0.1	-3
	1751	4.9	149
	2356	-0.1	-3
24 F	0609	5.2	158
	1224	0.0	0
	1828	4.6	140
25 Sa	0028	0.3	9
	0640	4.9	149
	1259	0.2	6
	1907	4.3	131
26 Su	0103	0.8	24
	0712	4.5	137
	1336	0.5	15
	1949	3.9	119
27 M	0139	1.2	37
	0746	4.1	125
	1416	0.8	24
	2037	3.6	110
28 Tu	0224	1.6	49
	0826	3.7	113
	1509	1.1	34
	2146	3.3	101
29 W	0330	2.0	61
	0926	3.4	104
	1623	1.2	37
	2320	3.3	101
30 Th	0511	2.1	64
	1051	3.2	98
	1746	1.2	37
31 F	0042	3.5	107
	0647	1.9	58
	1221	3.3	101
	1853	1.0	30

SEPTEMBER

Day	Time	Height ft	Height cm
1 Sa	0140	3.9	119
	0745	1.6	49
	1326	3.6	110
	1945	0.6	18
2 Su	0219	4.3	131
	0827	1.1	34
	1414	4.0	122
	2027	0.3	9
3 M	0254	4.7	143
	0900	0.7	21
	1454	4.3	131
	2104	0.0	0
4 Tu	0326	5.0	152
	0936	0.3	9
	1531	4.7	143
	2141	-0.3	-9
5 W	0358	5.3	162
	1008	-0.1	-3
	1608	5.0	152
	2217	-0.4	-12
6 Th	0430	5.5	168
	1043	-0.3	-9
	1645	5.1	155
	2253	-0.4	-12
7 F	0504	5.5	168
	1118	-0.5	-15
	1726	5.2	158
	2329	-0.3	-9
8 Sa	0539	5.4	165
	1154	-0.5	-15
	1806	5.1	155
9 Su	0009	0.0	0
	0618	5.2	158
	1238	-0.4	-12
	1852	4.8	146
10 M	0054	0.4	12
	0700	4.9	149
	1323	-0.1	-3
	1944	4.5	137
11 Tu	0146	0.8	24
	0749	4.4	134
	1421	0.2	6
	2050	4.2	128
12 W	0253	1.3	40
	0853	4.0	122
	1530	0.5	15
	2215	4.0	122
13 Th	0423	1.5	46
	1017	3.7	113
	1658	0.6	18
	2348	4.0	122
14 F	0600	1.4	43
	1154	3.7	113
	1823	0.5	15
15 Sa	0102	4.4	134
	0716	1.0	30
	1310	4.0	122
	1929	0.2	6
16 Su	0158	4.7	143
	0811	0.6	18
	1409	4.4	134
	2019	-0.1	-3
17 M	0243	5.0	152
	0854	0.2	6
	1456	4.7	143
	2104	-0.2	-6
18 Tu	0321	5.2	158
	0933	-0.1	-3
	1536	4.9	149
	2142	-0.3	-9
19 W	0357	5.3	162
	1008	-0.3	-9
	1613	5.0	152
	2217	-0.2	-6
20 Th	0429	5.3	162
	1043	-0.4	-12
	1649	5.0	152
	2252	-0.1	-3
21 F	0459	5.1	155
	1115	-0.3	-9
	1724	4.8	146
	2324	0.2	6
22 Sa	0529	4.9	149
	1145	-0.2	-6
	1758	4.6	140
	2357	0.5	15
23 Su	0558	4.6	140
	1216	0.0	0
	1835	4.3	131
24 M	0030	0.9	27
	0627	4.3	131
	1251	0.3	9
	1912	4.0	122
25 Tu	0106	1.3	40
	0659	3.9	119
	1328	0.6	18
	1959	3.7	113
26 W	0151	1.7	52
	0740	3.5	107
	1416	1.0	30
	2101	3.4	104
27 Th	0258	1.9	58
	0837	3.2	98
	1524	1.2	37
	2227	3.4	104
28 F	0439	2.0	61
	1015	3.0	91
	1651	1.2	37
	2351	3.6	110
29 Sa	0615	1.7	52
	1149	3.1	94
	1807	1.0	30
30 Su	0049	3.9	119
	0706	1.3	40
	1257	3.5	107
	1903	0.7	21

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0132	4.3	131	16 Tu	0214	4.8	146
	0747	0.8	24		0832	0.0	0
	1345	3.9	119		1438	4.5	137
	1948	0.4	12		2040	0.2	6
2 Tu	0209	4.7	143	17 W	0251	5.0	152
	0822	0.3	9		0907	-0.2	-6
	1425	4.4	134		1518	4.7	143
	2030	0.0	0		2119	0.2	6
3 W	0243	5.0	152	18 Th	0323	5.0	152
	0857	-0.1	-3		0941	-0.4	-12
	1505	4.8	146		1555	4.8	146
	2107	-0.2	-6		2152	0.2	6
4 Th	0320	5.3	162	19 F	0356	4.9	149
	0933	-0.5	-15		1013	-0.4	-12
	1544	5.1	155		1629	4.8	146
	2147	-0.4	-12		2226	0.4	12
5 F	0356	5.5	168	20 Sa	0426	4.8	146
	1011	-0.8	-24		1043	-0.4	-12
	1624	5.3	162		1701	4.7	143
	2228	-0.4	-12		2259	0.6	18
6 Sa	0433	5.5	168	21 Su	0455	4.6	140
	1050	-0.9	-27		1115	-0.3	-9
	1705	5.4	165		1737	4.6	140
	2308	-0.2	-6		2333	0.8	24
7 Su	0512	5.3	162	22 M	0525	4.4	134
	1131	-0.9	-27		1145	-0.1	-3
	1751	5.2	158		1811	4.4	134
	2353	0.1	3				
8 M	0555	5.0	152	23 Tu	0008	1.1	34
	1216	-0.7	-21		0557	4.1	125
	1840	5.0	152		1219	0.2	6
					1851	4.1	125
9 Tu	0043	0.5	15	24 W	0046	1.3	40
	0643	4.6	140		0630	3.7	113
	1307	-0.3	-9		1256	0.5	15
	1939	4.6	140		1936	3.9	119
10 W	0141	0.9	27	25 Th	0136	1.6	49
	0738	4.2	128		0715	3.4	104
	1405	0.1	3		1341	0.8	24
	2045	4.3	131		2029	3.7	113
11 Th	0255	1.2	37	26 F	0239	1.8	55
	0850	3.7	113		0810	3.1	94
	1519	0.4	12		1439	1.0	30
	2207	4.1	125		2135	3.7	113
12 F	0428	1.3	40	27 Sa	0359	1.7	52
	1019	3.5	107		0930	3.0	91
	1645	0.6	18		1553	1.1	34
	2330	4.2	128		2245	3.8	116
13 Sa	0555	1.1	34	28 Su	0514	1.5	46
	1149	3.6	110		1059	3.1	94
	1804	0.5	15		1708	1.1	34
					2346	4.0	122
14 Su	0037	4.4	134	29 M	0612	1.1	34
	0700	0.7	21		1212	3.5	107
	1302	3.9	119		1810	0.9	27
	1908	0.4	12				
15 M	0129	4.7	143	30 Tu	0036	4.3	131
	0750	0.3	9		0700	0.6	18
	1355	4.3	131		1305	3.9	119
	1958	0.2	6		1903	0.6	18
				31 W	0118	4.6	140
					0742	0.1	3
					1351	4.4	134
					1951	0.3	9

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0203	5.0	152	16 F	0252	4.6	140
	0822	-0.4	-12		0913	-0.2	-6
	1436	4.8	146		1536	4.6	140
	2036	0.1	3		2132	0.8	24
2 F	0243	5.2	158	17 Sa	0325	4.6	140
	0903	-0.8	-24		0949	-0.3	-9
	1521	5.2	158		1613	4.7	143
	2123	-0.1	-3		2207	0.9	27
3 Sa	0325	5.3	162	18 Su	0357	4.5	137
	0945	-1.0	-30		1021	-0.3	-9
	1605	5.4	165		1646	4.7	143
	2208	-0.1	-3		2243	0.9	27
4 Su	0408	5.4	165	19 M	0431	4.4	134
	1028	-1.1	-34		1053	-0.2	-6
	1652	5.5	168		1722	4.6	140
	2254	0.0	0		2319	1.1	34
5 M	0453	5.2	158	20 Tu	0503	4.2	128
	1115	-1.1	-34		1125	-0.1	-3
	1742	5.4	165		1757	4.6	140
	2345	0.2	6		2358	1.2	37
6 Tu	0540	4.9	149	21 W	0539	4.0	122
	1202	-0.8	-24		1201	0.1	3
	1834	5.2	158		1835	4.5	137
7 W	0040	0.5	15	22 Th	0038	1.3	40
	0633	4.6	140		0615	3.8	116
	1256	-0.5	-15		1237	0.3	9
	1931	4.9	149		1915	4.3	131
8 Th	0141	0.8	24	23 F	0123	1.4	43
	0733	4.2	128		0659	3.6	110
	1354	0.0	0		1315	0.6	18
	2035	4.7	143		1959	4.2	128
9 F	0253	1.0	30	24 Sa	0215	1.5	46
	0844	3.8	116		0751	3.4	104
	1503	0.4	12		1404	0.8	24
	2146	4.5	137		2047	4.2	128
10 Sa	0412	1.0	30	25 Su	0311	1.4	43
	1007	3.6	110		0855	3.3	101
	1617	0.6	18		1500	1.0	30
	2256	4.4	134		2143	4.2	128
11 Su	0526	0.9	27	26 M	0415	1.3	40
	1127	3.7	113		1006	3.4	104
	1731	0.8	24		1605	1.1	34
	2359	4.4	134		2239	4.2	128
12 M	0629	0.6	18	27 Tu	0512	1.0	30
	1236	3.9	119		1119	3.6	110
	1834	0.8	24		1711	1.1	34
					2335	4.4	134
13 Tu	0052	4.5	137	28 W	0608	0.6	18
	0718	0.3	9		1224	3.9	119
	1332	4.1	125		1816	1.0	30
	1929	0.8	24				
14 W	0137	4.6	140	29 Th	0029	4.6	140
	0803	0.1	3		0702	0.1	3
	1419	4.3	131		1321	4.4	134
	2012	0.8	24		1916	0.8	24
15 Th	0217	4.6	140	30 F	0121	4.8	146
	0841	-0.1	-3		0750	-0.3	-9
	1500	4.5	137		1415	4.8	146
	2054	0.8	24		2011	0.6	18

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0211	5.0	152	16 Su	0302	4.3	131
	0838	-0.7	-21		0930	0.0	0
	1504	5.2	158		1602	4.6	140
	2104	0.4	12		2157	1.2	37
2 Su	0302	5.2	158	17 M	0341	4.3	131
	0926	-1.0	-30		1003	-0.1	-3
	1555	5.5	168		1638	4.8	146
	2155	0.3	9		2235	1.2	37
3 M	0351	5.2	158	18 Tu	0417	4.3	131
	1014	-1.1	-34		1038	-0.1	-3
	1645	5.6	171		1710	4.9	149
	2248	0.3	9		2312	1.1	34
4 Tu	0441	5.2	158	19 W	0453	4.3	131
	1104	-1.0	-30		1112	0.0	0
	1736	5.6	171		1745	4.9	149
	2342	0.3	9		2350	1.1	34
5 W	0533	5.0	152	20 Th	0530	4.2	128
	1153	-0.9	-27		1145	0.1	3
	1826	5.5	168		1819	4.9	149
6 Th	0035	0.4	12	21 F	0024	1.1	34
	0627	4.7	143		0607	4.1	125
	1245	-0.5	-15		1218	0.2	6
	1919	5.3	162		1854	4.9	149
7 F	0133	0.6	18	22 Sa	0101	1.1	34
	0723	4.4	134		0646	4.0	122
	1339	-0.1	-3		1256	0.4	12
	2013	5.1	155		1928	4.8	146
8 Sa	0232	0.7	21	23 Su	0144	1.1	34
	0826	4.1	125		0730	3.9	119
	1437	0.4	12		1335	0.6	18
	2109	4.8	146		2007	4.7	143
9 Su	0338	0.8	24	24 M	0226	1.1	34
	0934	3.8	116		0818	3.8	116
	1537	0.8	24		1421	0.8	24
	2209	4.6	140		2050	4.6	140
10 M	0442	0.8	24	25 Tu	0319	1.0	30
	1047	3.7	113		0919	3.8	116
	1642	1.1	34		1514	1.1	34
	2306	4.4	134		2140	4.5	137
11 Tu	0543	0.7	21	26 W	0417	0.9	27
	1202	3.7	113		1027	3.8	116
	1751	1.3	40		1621	1.3	40
					2240	4.5	137
12 W	0004	4.3	131	27 Th	0519	0.6	18
	0642	0.6	18		1143	4.0	122
	1305	3.9	119		1734	1.4	43
	1852	1.4	43		2343	4.5	137
13 Th	0057	4.3	131	28 F	0623	0.3	9
	0730	0.5	15		1252	4.3	131
	1358	4.1	125		1847	1.3	40
	1947	1.4	43				
14 F	0142	4.3	131	29 Sa	0050	4.7	143
	0814	0.3	9		0726	0.0	0
	1444	4.3	131		1358	4.7	143
	2035	1.4	43		1955	1.1	34
15 Sa	0223	4.3	131	30 Su	0151	4.8	146
	0852	0.1	3		0822	-0.4	-12
	1524	4.5	137		1455	5.1	155
	2117	1.3	40		2056	0.8	24
				31 M	0248	5.0	152
					0915	-0.7	-21
					1547	5.5	168
					2150	0.6	18

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

GUAYAQUIL, ECUADOR, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0446	1.6	49	16	0526	0.7	21
M	1001	11.7	357	Tu	1048	11.6	354
	1651	1.0	30		1742	0.7	21
	2227	12.5	381		2309	12.2	372
2	0523	1.5	46	17	0608	1.0	30
Tu	1043	11.8	360	W	1127	11.4	347
	1727	1.1	34		1824	1.2	37
	2310	12.5	381		2349	12.0	366
3	0606	1.5	46	18	0653	1.3	40
W	1130	11.8	360	Th	1208	11.1	338
	1811	1.3	40		1909	1.7	52
	2358	12.4	378				
4	0658	1.5	46	19	0032	11.7	357
Th	1224	11.5	351	F	0740	1.7	52
	1914	1.7	52		1256	10.8	329
					2001	2.2	67
5	0051	12.1	369	20	0117	11.3	344
F	0802	1.6	49	Sa	0834	1.9	58
	1322	11.2	341		1349	10.4	317
	2026	2.0	61		2100	2.6	79
6	0153	11.6	354	21	0213	10.8	329
Sa	0910	1.6	49	Su	0933	2.0	61
	1430	10.8	329		1450	10.1	308
	2139	2.1	64		2201	2.8	85
7	0259	11.2	341	22	0312	10.4	317
Su	1016	1.4	43	M	1032	1.9	58
	1542	10.7	326		1554	10.0	305
	2247	2.0	61		2301	2.7	82
8	0410	11.0	335	23	0416	10.3	314
M	1119	1.0	30	Tu	1130	1.7	52
	1655	10.8	329		1658	10.2	311
	2351	1.6	49		2359	2.4	73
9	0519	11.0	335	24	0516	10.3	314
Tu	1220	0.4	12	W	1225	1.3	40
	1804	11.2	341		1757	10.6	323
10	0049	1.1	34	25	0052	2.0	61
W	0623	11.2	341	Th	0614	10.5	320
	1313	0.0	0		1315	1.0	30
	1905	11.6	354		1849	11.0	335
11	0142	0.7	21	26	0140	1.6	49
Th	0721	11.4	347	F	0702	10.9	332
	1404	-0.4	-12		1400	0.7	21
	1956	12.0	366		1932	11.5	351
12	0233	0.4	12	27	0226	1.3	40
F	0811	11.6	354	Sa	0746	11.2	341
	1453	-0.5	-15		1441	0.5	15
	2041	12.3	375		2012	12.0	366
13	0319	0.2	6	28	0307	1.1	34
Sa	0854	11.7	357	Su	0825	11.6	354
	1537	-0.5	-15		1521	0.4	12
	2121	12.4	378		2051	12.4	378
14	0404	0.3	9	29	0345	0.9	27
Su	0934	11.7	357	M	0905	11.9	363
	1619	-0.2	-6		1558	0.4	12
	2157	12.4	378		2128	12.7	387
15	0446	0.4	12	30	0422	0.8	24
M	1011	11.7	357	Tu	0943	12.2	372
	1701	0.2	6		1633	0.6	18
	2233	12.3	375		2206	12.8	390
				31	0459	0.9	27
				W	1025	12.3	375
					1710	0.8	24
					2248	12.8	390

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0541	1.0	30	16	0611	1.4	43
Th	1110	12.1	369	F	1130	11.4	347
	1752	1.2	37		1824	1.9	58
	2334	12.5	381		2347	11.7	357
2	0632	1.3	40	17	0653	1.8	55
F	1200	11.7	357	Sa	1213	11.1	338
	1851	1.7	52		1912	2.5	76
3	0024	12.0	366	18	0032	11.2	341
Sa	0736	1.6	49	Su	0749	2.2	67
	1258	11.2	341		1304	10.6	323
	2005	2.2	67		2018	3.0	91
4	0125	11.3	344	19	0122	10.7	326
Su	0846	1.8	55	M	0852	2.4	73
	1407	10.6	323		1405	10.2	311
	2119	2.4	73		2125	3.1	94
5	0234	10.7	326	20	0228	10.2	311
M	0954	1.6	49	Tu	0957	2.4	73
	1522	10.4	317		1513	10.0	305
	2229	2.2	67		2230	2.9	88
6	0351	10.4	317	21	0338	10.0	305
Tu	1100	1.2	37	W	1058	2.1	64
	1639	10.5	320		1621	10.2	311
	2332	1.7	52		2329	2.5	76
7	0506	10.6	323	22	0444	10.1	308
W	1200	0.6	18	Th	1153	1.6	49
	1753	11.0	335		1724	10.6	323
8	0030	1.1	34	23	0023	1.9	58
Th	0614	11.0	335	F	0546	10.5	320
	1254	0.0	0		1245	1.0	30
	1854	11.6	354		1817	11.2	341
9	0123	0.5	15	24	0113	1.3	40
F	0708	11.4	347	Sa	0638	11.1	338
	1345	-0.4	-12		1331	0.6	18
	1942	12.1	369		1905	11.8	360
10	0211	0.1	3	25	0157	0.8	24
Sa	0754	11.7	357	Su	0723	11.6	354
	1430	-0.6	-18		1415	0.3	9
	2021	12.4	378		1947	12.3	375
11	0255	-0.1	-3	26	0239	0.5	15
Su	0834	11.9	363	M	0805	12.0	366
	1513	-0.5	-15		1456	0.1	3
	2056	12.5	381		2027	12.7	387
12	0337	-0.1	-3	27	0320	0.3	9
M	0910	11.9	363	Tu	0844	12.4	378
	1553	-0.2	-6		1535	0.2	6
	2129	12.5	381		2105	12.9	393
13	0417	0.2	6	28	0359	0.3	9
Tu	0944	11.9	363	W	0924	12.5	381
	1631	0.2	6		1614	0.4	12
	2201	12.4	378		2145	12.9	393
14	0454	0.5	15				
W	1017	11.8	360				
	1709	0.8	24				
	2233	12.3	375				
15	0531	0.9	27				
Th	1051	11.7	357				
	1746	1.4	43				
	2309	12.1	369				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0438	0.4	12	16	0457	1.0	30
Th	1006	12.5	381	F	1020	11.7	357
	1657	0.8	24		1713	1.7	52
	2227	12.7	387		2233	11.8	360
2	0521	0.7	21	17	0533	1.5	46
F	1051	12.2	372	Sa	1057	11.5	351
	1742	1.3	40		1749	2.2	67
	2313	12.2	372		2310	11.5	351
3	0613	1.2	37	18	0608	1.9	58
Sa	1142	11.7	357	Su	1139	11.2	341
	1843	1.9	58		1832	2.7	82
					2355	11.1	338
4	0003	11.6	354	19	0701	2.3	70
Su	0717	1.6	49	M	1227	10.8	329
	1240	11.1	338		1938	3.1	94
	1951	2.3	70				
5	0106	10.9	332	20	0048	10.6	323
M	0826	1.8	55	Tu	0811	2.6	79
	1349	10.5	320		1328	10.5	320
	2102	2.4	73		2050	3.1	94
6	0218	10.3	314	21	0152	10.2	311
Tu	0934	1.7	52	W	0920	2.6	79
	1505	10.3	314		1436	10.3	314
	2210	2.1	64		2155	2.9	88
7	0335	10.1	308	22	0301	10.1	308
W	1038	1.3	40	Th	1023	2.2	67
	1623	10.5	320		1544	10.5	320
	2311	1.6	49		2255	2.3	70
8	0450	10.4	317	23	0410	10.3	314
Th	1137	0.7	21	F	1119	1.7	52
	1732	11.1	338		1647	10.9	332
					2351	1.6	49
9	0008	0.9	27	24	0512	10.7	326
F	0556	10.9	332	Sa	1212	1.1	34
	1230	0.2	6		1743	11.5	351
	1829	11.6	354				
10	0057	0.3	9	25	0041	1.0	30
Sa	0647	11.4	347	Su	0607	11.3	344
	1318	-0.2	-6		1302	0.6	18
	1913	12.1	369		1833	12.0	366
11	0144	-0.1	-3	26	0127	0.5	15
Su	0731	11.7	357	M	0654	11.8	360
	1403	-0.4	-12		1347	0.3	9
	1952	12.3	375		1918	12.4	378
12	0228	-0.3	-9	27	0211	0.1	3
M	0808	11.9	363	Tu	0740	12.3	375
	1446	-0.2	-6		1431	0.2	6
	2024	12.3	375		2000	12.7	387
13	0308	-0.1	-3	28	0255	0.0	0
Tu	0842	12.0	366	W	0823	12.5	381
	1526	0.1	3		1514	0.2	6
	2057	12.3	375		2042	12.8	390
14	0347	0.2	6	29	0337	0.0	0
W	0914	11.9	363	Th	0906	12.6	384
	1603	0.6	18		1558	0.5	15
	2128	12.2	372		2125	12.6	384
15	0424	0.6	18	30	0422	0.3	9
Th	0946	11.9	363	F	0951	12.4	378
	1638	1.1	34		1645	0.9	27
	2200	12.1	369		2208	12.3	375
				31	0508	0.6	18
				Sa	1038	12.1	369
					1736	1.4	43
					2257	11.8	360

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
Seasonal variations in sea level have not been included in these predictions.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0603	1.1	34	16 M	0536	1.9	58
	1128	11.6	354		1113	11.3	344
	1835	1.9	58		1810	2.7	82
	2352	11.2	341		2326	11.0	335
2 M	0703	1.5	46	17 Tu	0619	2.2	67
	1229	11.1	338		1200	11.2	341
	1938	2.2	67		1909	2.9	88
3 Tu	0053	10.6	323	18 W	0019	10.7	326
	0807	1.7	52		0728	2.4	73
	1333	10.7	326		1258	11.0	335
	2044	2.1	64		2015	2.9	88
4 W	0202	10.2	311	19 Th	0120	10.4	317
	0910	1.6	49		0839	2.4	73
	1444	10.6	323		1400	10.9	332
	2146	1.8	55		2119	2.6	79
5 Th	0314	10.1	308	20 F	0228	10.4	317
	1011	1.3	40		0942	2.2	67
	1554	10.8	329		1503	11.0	335
	2244	1.3	40		2219	2.0	61
6 F	0426	10.4	317	21 Sa	0333	10.6	323
	1108	0.8	24		1042	1.7	52
	1658	11.2	341		1607	11.3	344
	2337	0.7	21		2315	1.4	43
7 Sa	0524	10.9	332	22 Su	0437	11.0	335
	1201	0.4	12		1137	1.3	40
	1753	11.6	354		1705	11.7	357
8 Su	0028	0.2	6	23 M	0007	0.8	24
	0617	11.3	344		0533	11.4	347
	1249	0.2	6		1230	0.9	27
	1836	11.9	363		1757	12.1	369
9 M	0115	-0.1	-3	24 Tu	0057	0.3	9
	0659	11.6	354		0628	11.9	363
	1334	0.1	3		1318	0.6	18
	1916	12.0	366		1849	12.3	375
10 Tu	0159	-0.1	-3	25 W	0144	0.0	0
	0737	11.7	357		0716	12.2	372
	1417	0.3	9		1408	0.5	15
	1952	12.0	366		1935	12.4	378
11 W	0239	0.0	0	26 Th	0231	-0.1	-3
	0813	11.7	357		0804	12.4	378
	1458	0.7	21		1457	0.5	15
	2026	11.9	363		2022	12.4	378
12 Th	0318	0.3	9	27 F	0318	-0.1	-3
	0848	11.7	357		0852	12.4	378
	1536	1.1	34		1544	0.7	21
	2057	11.8	360		2109	12.2	372
13 F	0356	0.8	24	28 Sa	0406	0.1	3
	0920	11.6	354		0939	12.2	372
	1614	1.6	49		1635	1.0	30
	2130	11.6	354		2156	11.8	360
14 Sa	0430	1.2	37	29 Su	0457	0.5	15
	0953	11.6	354		1023	12.0	366
	1651	2.1	64		1728	1.4	43
	2204	11.4	347		2246	11.4	347
15 Su	0505	1.6	49	30 M	0550	0.8	24
	1030	11.5	351		1120	11.6	354
	1728	2.4	73		1823	1.6	49
	2241	11.2	341		2339	11.0	335

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0646	1.2	37	16 W	0555	1.9	58
	1216	11.3	344		1139	11.6	354
	1920	1.8	55		1842	2.5	76
					2355	10.9	332
2 W	0037	10.6	323	17 Th	0645	2.0	61
	0743	1.3	40		1229	11.6	354
	1314	11.1	338		1940	2.4	73
	2018	1.7	52				
3 Th	0141	10.3	314	18 F	0051	10.9	332
	0842	1.4	43		0754	2.1	64
	1415	11.0	335		1325	11.6	354
	2116	1.5	46		2040	2.1	64
4 F	0245	10.3	314	19 Sa	0153	10.8	329
	0940	1.3	40		0900	2.0	61
	1518	11.1	338		1426	11.6	354
	2211	1.1	34		2140	1.8	55
5 Sa	0347	10.5	320	20 Su	0257	10.9	332
	1034	1.1	34		1003	1.8	55
	1615	11.2	341		1527	11.7	357
	2304	0.7	21		2239	1.3	40
6 Su	0445	10.8	329	21 M	0400	11.1	338
	1127	0.9	27		1103	1.5	46
	1708	11.4	347		1627	11.8	360
	2356	0.4	12		2335	0.8	24
7 M	0537	11.0	335	22 Tu	0503	11.4	347
	1217	0.8	24		1200	1.2	37
	1756	11.5	351		1727	11.9	363
8 Tu	0042	0.2	6	23 W	0030	0.4	12
	0625	11.2	341		0601	11.7	357
	1305	0.8	24		1255	1.0	30
	1838	11.5	351		1822	12.0	366
9 W	0129	0.2	6	24 Th	0122	0.1	3
	0707	11.3	344		0657	11.9	363
	1350	1.0	30		1348	0.8	24
	1918	11.5	351		1915	12.0	366
10 Th	0211	0.3	9	25 F	0213	-0.1	-3
	0745	11.4	347		0750	12.1	369
	1433	1.2	37		1441	0.7	21
	1955	11.4	347		2008	11.9	363
11 F	0253	0.6	18	26 Sa	0304	-0.1	-3
	0822	11.4	347		0841	12.2	372
	1515	1.6	49		1532	0.8	24
	2032	11.2	341		2057	11.8	360
12 Sa	0332	1.0	30	27 Su	0353	0.0	0
	0858	11.4	347		0930	12.2	372
	1555	1.9	58		1622	0.9	27
	2107	11.2	341		2146	11.6	354
13 Su	0410	1.3	40	28 M	0443	0.2	6
	0934	11.4	347		1019	12.0	366
	1633	2.2	67		1713	1.1	34
	2143	11.1	338		2235	11.3	344
14 M	0446	1.6	49	29 Tu	0533	0.5	15
	1011	11.5	351		1107	11.9	363
	1712	2.4	73		1803	1.2	37
	2220	11.1	338		2325	11.1	338
15 Tu	0521	1.8	55	30 W	0624	0.8	24
	1051	11.6	354		1157	11.7	357
	1754	2.5	76		1856	1.3	40
	2305	11.0	335				
				31 Th	0016	10.8	329
					0716	1.0	30
					1248	11.5	351
					1949	1.3	40

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0109	10.6	323	16 Sa	0023	11.3	344
	0808	1.3	40		0706	1.8	55
	1338	11.4	347		1251	12.1	369
	2041	1.3	40		1959	1.8	55
2 Sa	0207	10.5	320	17 Su	0119	11.2	341
	0903	1.4	43		0815	1.9	58
	1434	11.3	344		1349	11.9	363
	2135	1.1	34		2103	1.6	49
3 Su	0303	10.5	320	18 M	0222	11.1	338
	0957	1.5	46		0926	2.0	61
	1527	11.2	341		1450	11.7	357
	2227	1.0	30		2206	1.4	43
4 M	0359	10.5	320	19 Tu	0329	11.0	335
	1051	1.5	46		1034	1.9	58
	1621	11.1	338		1554	11.5	351
	2320	0.8	24		2308	1.0	30
5 Tu	0455	10.7	326	20 W	0435	11.1	338
	1143	1.5	46		1137	1.6	49
	1714	11.1	338		1700	11.5	351
6 W	0009	0.7	21	21 Th	0007	0.6	18
	0548	10.8	329		0540	11.3	344
	1235	1.5	46		1236	1.3	40
	1802	11.0	335		1802	11.5	351
7 Th	0059	0.6	18	22 F	0103	0.2	6
	0636	10.9	332		0641	11.6	354
	1323	1.5	46		1332	1.0	30
	1849	11.0	335		1902	11.6	354
8 F	0145	0.7	21	23 Sa	0157	-0.1	-3
	0721	11.0	335		0739	11.9	363
	1411	1.7	52		1425	0.7	21
	1931	10.9	332		1956	11.6	354
9 Sa	0229	0.8	24	24 Su	0248	-0.3	-9
	0800	11.1	338		0832	12.1	369
	1454	1.8	55		1517	0.6	18
	2010	10.9	332		2046	11.7	357
10 Su	0311	1.0	30	25 M	0337	-0.3	-9
	0840	11.3	344		0919	12.3	375
	1536	1.9	58		1605	0.5	15
	2048	10.9	332		2133	11.6	354
11 M	0351	1.2	37	26 Tu	0424	-0.2	-6
	0915	11.5	351		1004	12.3	375
	1617	2.1	64		1652	0.6	18
	2125	11.0	335		2217	11.5	351
12 Tu	0428	1.4	43	27 W	0510	0.1	3
	0953	11.7	357		1046	12.2	372
	1654	2.1	64		1739	0.8	24
	2203	11.2	341		2302	11.4	347
13 W	0502	1.5	46	28 Th	0555	0.5	15
	1032	11.9	363		1128	12.1	369
	1733	2.1	64		1824	0.9	27
	2244	11.3	344		2347	11.2	341
14 Th	0533	1.5	46	29 F	0643	0.9	27
	1114	12.1	369		1212	11.9	363
	1811	2.0	61		1912	1.1	34
	2331	11.4	347				
15 F	0610	1.6	49	30 Sa	0033	11.0	335
	1200	12.2	372		0732	1.3	40
	1901	1.9	58		1257	11.6	354
					2004	1.3	40

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
Seasonal variations in sea level have not been included in these predictions.

GUAYAQUIL, ECUADOR, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0124	10.7	326	16	0048	11.4	347
Su	0824	1.7	52	M	0740	2.0	61
	1346	11.3	344		1317	11.9	363
	2057	1.4	43		2030	1.7	52
2	0218	10.5	320	17	0151	11.1	338
M	0918	2.0	61	Tu	0859	2.2	67
	1441	11.0	335		1421	11.4	347
	2150	1.4	43		2139	1.6	49
3	0314	10.3	314	18	0302	10.8	329
Tu	1015	2.1	64	W	1013	2.2	67
	1537	10.8	329		1531	11.1	338
	2246	1.3	40		2247	1.3	40
4	0415	10.3	314	19	0415	10.8	329
W	1111	2.1	64	Th	1119	1.9	58
	1634	10.6	323		1642	10.9	332
	2340	1.2	37		2348	0.8	24
5	0512	10.4	317	20	0527	11.0	335
Th	1207	2.0	61	F	1220	1.4	43
	1729	10.6	323		1751	11.1	338
6	0031	1.0	30	21	0046	0.2	6
F	0607	10.6	323	Sa	0633	11.5	351
	1258	1.9	58		1316	0.9	27
	1822	10.6	323		1853	11.4	347
7	0121	0.9	27	22	0140	-0.2	-6
Sa	0657	10.9	332	Su	0729	12.0	366
	1347	1.7	52		1408	0.4	12
	1908	10.7	326		1945	11.6	354
8	0206	0.8	24	23	0229	-0.5	-15
Su	0739	11.2	341	M	0818	12.3	375
	1432	1.7	52		1457	0.2	6
	1950	10.9	332		2032	11.8	360
9	0250	0.8	24	24	0316	-0.6	-18
M	0818	11.4	347	Tu	0902	12.5	381
	1514	1.6	49		1543	0.1	3
	2029	11.1	338		2116	11.9	363
10	0329	0.9	27	25	0400	-0.4	-12
Tu	0855	11.7	357	W	0940	12.5	381
	1553	1.6	49		1627	0.2	6
	2106	11.3	344		2154	11.8	360
11	0404	1.0	30	26	0443	0.0	0
W	0932	12.1	369	Th	1017	12.4	378
	1630	1.6	49		1710	0.5	15
	2144	11.5	351		2233	11.7	357
12	0438	1.1	34	27	0525	0.5	15
Th	1009	12.3	375	F	1054	12.2	372
	1705	1.5	46		1752	0.8	24
	2222	11.7	357		2313	11.5	351
13	0507	1.2	37	28	0608	1.0	30
F	1049	12.5	381	Sa	1134	12.0	366
	1741	1.5	46		1835	1.1	34
	2307	11.8	360		2354	11.2	341
14	0539	1.3	40	29	0653	1.6	49
Sa	1131	12.5	381	Su	1215	11.7	357
	1824	1.5	46		1922	1.5	46
	2355	11.7	357				
15	0627	1.6	49	30	0040	10.9	332
Su	1221	12.3	375	M	0743	2.1	64
	1922	1.6	49		1301	11.2	341
					2015	1.8	55
				31	0133	10.5	320
				Tu	0840	2.5	76
					1354	10.8	329
					2113	1.9	58

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0230	10.2	311	16	0244	10.5	320
W	0941	2.7	82	Th	0956	2.4	73
	1454	10.4	317		1513	10.5	320
	2211	1.9	58		2229	1.4	43
2	0334	10.1	308	17	0402	10.6	323
Th	1040	2.6	79	F	1103	1.9	58
	1557	10.2	311		1629	10.6	323
	2309	1.7	52		2329	0.8	24
3	0439	10.2	311	18	0516	11.0	335
F	1138	2.3	70	Sa	1202	1.2	37
	1658	10.3	314		1740	10.9	332
4	0004	1.3	40	19	0028	0.2	6
Sa	0538	10.5	320	Su	0620	11.6	354
	1231	1.9	58		1257	0.5	15
	1754	10.5	320		1839	11.4	347
5	0054	1.0	30	20	0119	-0.3	-9
Su	0630	11.0	335	M	0713	12.1	369
	1321	1.6	49		1346	0.0	0
	1844	10.8	329		1930	11.8	360
6	0140	0.7	21	21	0207	-0.6	-18
M	0715	11.4	347	Tu	0758	12.4	378
	1406	1.3	40		1433	-0.2	-6
	1929	11.1	338		2014	12.0	366
7	0224	0.6	18	22	0251	-0.6	-18
Tu	0755	11.8	360	W	0837	12.6	384
	1448	1.1	34		1516	-0.2	-6
	2008	11.4	347		2052	12.1	369
8	0303	0.5	15	23	0334	-0.3	-9
W	0833	12.1	369	Th	0911	12.5	381
	1527	1.0	30		1558	0.0	0
	2045	11.8	360		2127	12.0	366
9	0339	0.6	18	24	0414	0.1	3
Th	0908	12.4	378	F	0945	12.4	378
	1602	1.0	30		1637	0.4	12
	2122	12.0	366		2202	11.8	360
10	0412	0.7	21	25	0453	0.7	21
F	0943	12.6	384	Sa	1020	12.2	372
	1638	1.0	30		1716	0.8	24
	2201	12.2	372		2238	11.6	354
11	0443	0.9	27	26	0533	1.3	40
Sa	1022	12.7	387	Su	1054	11.9	363
	1713	1.1	34		1757	1.3	40
	2243	12.1	369		2315	11.3	344
12	0518	1.2	37	27	0615	1.9	58
Su	1105	12.5	381	M	1133	11.5	351
	1755	1.3	40		1843	1.7	52
	2330	11.9	363		2358	11.0	335
13	0607	1.7	52	28	0704	2.5	76
M	1154	12.1	369	Tu	1218	11.1	338
	1853	1.6	49		1935	2.1	64
14	0024	11.4	347	29	0051	10.6	323
Tu	0725	2.2	67	W	0804	2.9	88
	1251	11.5	351		1309	10.6	323
	2009	1.8	55		2035	2.3	70
15	0130	10.9	332	30	0149	10.2	311
W	0844	2.5	76	Th	0906	3.0	91
	1358	10.9	332		1413	10.2	311
	2120	1.8	55		2138	2.3	70
				31	0255	10.1	308
				F	1010	2.8	85
					1521	10.0	305
					2237	2.0	61

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0403	10.2	311	16	0458	11.1	338
Sa	1108	2.3	70	Su	1140	0.9	27
	1626	10.2	311		1725	11.0	335
	2333	1.5	46				
2	0503	10.7	326	17	0004	0.2	6
Su	1202	1.8	55	M	0559	11.7	357
	1725	10.5	320		1233	0.2	6
					1820	11.5	351
3	0024	1.1	34	18	0054	-0.3	-9
M	0559	11.2	341	Tu	0646	12.2	372
	1252	1.3	40		1321	-0.3	-9
	1817	11.0	335		1907	11.9	363
4	0110	0.7	21	19	0142	-0.4	-12
Tu	0644	11.7	357	W	0729	12.4	378
	1337	0.8	24		1406	-0.4	-12
	1902	11.5	351		1950	12.1	369
5	0155	0.4	12	20	0225	-0.3	-9
W	0726	12.1	369	Th	0806	12.4	378
	1418	0.6	18		1448	-0.3	-9
	1942	11.9	363		2024	12.1	369
6	0235	0.4	12	21	0307	0.0	0
Th	0804	12.5	381	F	0840	12.3	375
	1458	0.5	15		1527	0.0	0
	2022	12.2	372		2058	12.0	366
7	0313	0.4	12	22	0345	0.5	15
F	0841	12.7	387	Sa	0913	12.1	369
	1536	0.5	15		1606	0.4	12
	2100	12.4	378		2132	11.8	360
8	0350	0.6	18	23	0424	1.1	34
Sa	0919	12.7	387	Su	0945	11.9	363
	1612	0.6	18		1643	0.9	27
	2140	12.4	378		2206	11.6	354
9	0427	1.0	30	24	0502	1.7	52
Su	0959	12.6	384	M	1019	11.6	354
	1651	0.9	27		1721	1.4	43
	2221	12.2	372		2243	11.4	347
10	0510	1.4	43	25	0542	2.2	67
M	1043	12.2	372	Tu	1056	11.3	344
	1739	1.2	37		1803	1.9	58
	2312	11.8	360		2325	11.1	338
11	0606	1.9	58	26	0629	2.7	82
Tu	1133	11.7	357	W	1141	10.9	332
	1843	1.6	49		1853	2.3	70
12	0008	11.3	344	27	0015	10.8	329
W	0719	2.4	73	Th	0728	3.0	91
	1232	11.0	335		1234	10.5	320
	1953	1.9	58		1957	2.5	76
13	0114	10.7	326	28	0112	10.5	320
Th	0831	2.5	76	F	0834	3.0	91
	1343	10.4	317		1336	10.1	308
	2102	1.8	55		2100	2.5	76
14	0230	10.5	320	29	0216	10.4	317
F	0939	2.2	67	Sa	0936	2.8	85
	1500	10.2	311		1444	10.0	305
	2208	1.4	43		2202	2.2	67
15	0347	10.6	323	30	0324	10.5	320
Sa	1042	1.6	49	Su	1034	2.2	67
	1616	10.4	317		1550	10.2	311
	2308	0.8	24		2258	1.7	52

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
Seasonal variations in sea level have not been included in these predictions.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0424	10.9	332	16 Tu	0527	11.7	357
	1129	1.6	49		1204	0.1	3
	1650	10.7	326		1753	11.4	347
	2349	1.2	37				
2 Tu	0520	11.4	347	17 W	0026	0.1	3
	1217	1.0	30		0614	12.0	366
	1743	11.2	341		1252	-0.2	-6
					1839	11.7	357
3 W	0039	0.8	24	18 Th	0113	0.0	0
	0609	11.9	363		0657	12.1	369
	1305	0.5	15		1337	-0.3	-9
	1831	11.7	357		1921	11.8	360
4 Th	0124	0.5	15	19 F	0158	0.2	6
	0654	12.3	375		0735	12.0	366
	1348	0.2	6		1420	-0.2	-6
	1916	12.1	369		1958	11.8	360
5 F	0207	0.4	12	20 Sa	0240	0.5	15
	0734	12.5	381		0809	11.9	363
	1430	0.1	3		1501	0.1	3
	1958	12.4	378		2032	11.7	357
6 Sa	0249	0.5	15	21 Su	0321	1.0	30
	0816	12.6	384		0843	11.7	357
	1511	0.2	6		1540	0.6	18
	2040	12.5	381		2107	11.6	354
7 Su	0332	0.7	21	22 M	0400	1.5	46
	0858	12.5	381		0916	11.5	351
	1554	0.4	12		1617	1.1	34
	2124	12.4	378		2140	11.5	351
8 M	0417	1.1	34	23 Tu	0438	2.0	61
	0940	12.3	375		0951	11.3	344
	1638	0.7	21		1654	1.5	46
	2209	12.1	369		2218	11.4	347
9 Tu	0507	1.5	46	24 W	0518	2.4	73
	1027	11.8	360		1028	11.1	338
	1731	1.1	34		1731	1.9	58
	2301	11.7	357		2257	11.3	344
10 W	0606	2.0	61	25 Th	0603	2.7	82
	1121	11.2	341		1112	10.8	329
	1832	1.5	46		1818	2.2	67
	2358	11.3	344		2344	11.1	338
11 Th	0709	2.2	67	26 F	0657	2.9	88
	1221	10.7	326		1203	10.6	323
	1936	1.7	52		1914	2.4	73
12 F	0103	10.9	332	27 Sa	0037	11.0	335
	0815	2.2	67		0758	2.8	85
	1330	10.3	314		1301	10.4	317
	2041	1.6	49		2018	2.4	73
13 Sa	0213	10.7	326	28 Su	0136	10.9	332
	0918	1.8	55		0858	2.6	79
	1443	10.2	311		1405	10.3	314
	2144	1.3	40		2120	2.3	70
14 Su	0324	10.9	332	29 M	0241	11.0	335
	1018	1.3	40		0956	2.1	64
	1555	10.5	320		1509	10.5	320
	2242	0.9	27		2218	1.9	58
15 M	0429	11.2	341	30 Tu	0341	11.3	344
	1114	0.7	21		1052	1.6	49
	1658	10.9	332		1610	10.8	329
	2335	0.4	12		2314	1.5	46
				31 W	0438	11.6	354
					1143	1.0	30
					1708	11.2	341

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0005	1.1	34	16 F	0045	0.8	24
	0532	11.9	363		0622	11.6	354
	1233	0.5	15		1310	0.0	0
	1801	11.7	357		1852	11.4	347
2 F	0055	0.8	24	17 Sa	0131	0.9	27
	0622	12.2	372		0705	11.5	351
	1321	0.2	5		1353	0.1	3
	1852	12.0	366		1932	11.4	347
3 Sa	0144	0.7	21	18 Su	0217	1.1	34
	0710	12.3	375		0742	11.4	347
	1406	0.0	0		1437	0.4	12
	1939	12.3	375		2010	11.4	347
4 Su	0231	0.7	21	19 M	0259	1.4	43
	0755	12.3	375		0819	11.3	344
	1453	0.0	0		1517	0.7	21
	2025	12.4	378		2045	11.4	347
5 M	0319	0.9	27	20 Tu	0340	1.7	52
	0841	12.2	372		0854	11.1	338
	1540	0.2	6		1556	1.0	30
	2112	12.3	375		2122	11.4	347
6 Tu	0408	1.1	34	21 W	0420	2.0	61
	0929	11.9	363		0929	11.1	338
	1629	0.4	12		1633	1.4	43
	2201	12.1	369		2158	11.5	351
7 W	0459	1.4	43	22 Th	0459	2.3	70
	1017	11.5	351		1006	11.0	335
	1721	0.8	24		1710	1.7	52
	2252	11.8	360		2236	11.6	354
8 Th	0555	1.6	49	23 F	0539	2.4	73
	1112	11.1	338		1048	11.0	335
	1816	1.1	34		1744	1.9	58
	2347	11.5	351		2320	11.6	354
9 F	0651	1.7	52	24 Sa	0625	2.5	76
	1208	10.7	326		1133	10.9	332
	1915	1.3	40		1826	2.0	61
10 Sa	0045	11.3	344	25 Su	0006	11.6	354
	0751	1.7	52		0714	2.4	73
	1312	10.5	320		1227	10.8	329
	2014	1.4	43		1925	2.1	64
11 Su	0146	11.1	338	26 M	0058	11.6	354
	0850	1.5	46		0812	2.3	70
	1417	10.4	317		1324	10.8	329
	2114	1.3	40		2030	2.2	67
12 M	0250	11.1	338	27 Tu	0157	11.5	351
	0946	1.1	34		0912	2.0	61
	1521	10.5	320		1426	10.8	329
	2210	1.1	34		2135	2.1	64
13 Tu	0349	11.2	341	28 W	0257	11.5	351
	1041	0.7	21		1012	1.6	49
	1623	10.7	326		1530	10.9	332
	2304	0.9	27		2235	1.9	58
14 W	0446	11.4	347	29 Th	0357	11.6	354
	1133	0.4	12		1108	1.2	37
	1719	11.0	335		1632	11.1	338
	2356	0.8	24		2335	1.6	49
15 Th	0537	11.5	351	30 F	0456	11.7	357
	1222	0.1	3		1204	0.7	21
	1809	11.2	341		1732	11.4	347

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0030	1.3	40	16 Su	0107	1.5	46
	0553	11.8	360		0636	10.9	332
	1257	0.3	9		1329	0.5	15
	1830	11.7	357		1910	11.1	338
2 Su	0123	1.0	30	17 M	0154	1.5	46
	0649	11.9	363		0721	11.0	335
	1349	0.0	0		1414	0.5	15
	1923	12.0	366		1950	11.2	341
3 M	0216	0.9	27	18 Tu	0239	1.5	46
	0740	11.9	363		0800	11.0	335
	1438	-0.1	-3		1456	0.7	21
	2015	12.2	372		2029	11.4	347
4 Tu	0307	0.8	24	19 W	0321	1.6	49
	0831	11.9	363		0837	11.0	335
	1528	-0.1	-3		1536	0.9	27
	2105	12.3	375		2104	11.6	354
5 W	0357	0.8	24	20 Th	0401	1.7	52
	0920	11.8	360		0913	11.1	338
	1617	0.0	0		1614	1.1	34
	2153	12.3	375		2139	11.8	360
6 Th	0448	0.9	27	21 F	0439	1.8	55
	1009	11.6	354		0950	11.2	341
	1707	0.2	6		1646	1.3	40
	2241	12.2	372		2215	12.0	366
7 F	0538	1.0	30	22 Sa	0515	1.9	58
	1057	11.4	347		1027	11.4	347
	1757	0.5	15		1715	1.4	43
	2331	12.0	366		2253	12.2	372
8 Sa	0629	1.1	34	23 Su	0550	1.9	58
	1150	11.1	338		1107	11.5	351
	1848	0.9	27		1739	1.5	46
					2334	12.2	372
9 Su	0021	11.8	360	24 M	0627	1.9	58
	0721	1.2	37		1155	11.4	347
	1243	10.8	329		1816	1.7	52
	1941	1.2	37				
10 M	0112	11.5	351	25 Tu	0022	12.1	369
	0815	1.3	40		0720	1.9	58
	1338	10.6	323		1247	11.3	344
	2038	1.4	43		1920	2.0	61
11 Tu	0207	11.3	344	26 W	0114	11.9	363
	0911	1.2	37		0824	1.9	58
	1439	10.4	317		1346	11.0	335
	2134	1.6	49		2046	2.3	70
12 W	0303	11.1	338	27 Th	0215	11.6	354
	1006	1.1	34		0933	1.8	55
	1538	10.4	317		1451	10.8	329
	2229	1.6	49		2200	2.3	70
13 Th	0401	11.0	335	28 F	0320	11.3	344
	1059	0.9	27		1039	1.5	46
	1637	10.5	320		1602	10.8	329
	2324	1.6	49		2308	2.1	64
14 F	0455	10.9	332	29 Sa	0426	11.2	341
	1153	0.7	21		1140	1.0	30
	1732	10.7	326		1711	11.0	335
15 Sa	0017	1.5	46	30 Su	0010	1.7	52
	0548	10.9	332		0532	11.3	344
	1242	0.6	18		1238	0.5	15
	1825	10.9	332		1815	11.4	347
				31 M	0107	1.2	37
					0634	11.5	351
					1332	0.0	0
					1915	11.9	363

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
Seasonal variations in sea level have not been included in these predictions.

BUENAVENTURA, COLOMBIA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height (ft)	Height (cm)
1	0029	1.0	30
M	0646	11.9	363
	1245	0.2	6
	1913	12.4	378
2	0112	0.9	27
Tu	0726	11.7	357
	1326	0.4	12
	1955	12.3	375
3	0157	1.0	30
W	0814	11.3	344
	1414	0.8	24
	2043	12.1	369
4	0248	1.2	37
Th	0907	10.9	332
	1504	1.2	37
	2136	11.8	360
5	0344	1.4	43
F	1009	10.6	323
	1602	1.7	52
	2237	11.5	351
6	0447	1.5	46
Sa	1120	10.4	317
	1708	2.1	64
	2346	11.4	347
7	0555	1.5	46
Su	1234	10.5	320
	1818	2.2	67
8	0055	11.6	354
M	0703	1.2	37
	1343	11.0	335
	1927	2.0	61
9	0202	12.0	366
Tu	0807	0.7	21
	1444	11.7	357
	2033	1.5	46
10	0302	12.4	378
W	0905	0.1	3
	1539	12.4	378
	2130	1.0	30
11	0355	12.8	390
Th	0958	-0.4	-12
	1630	12.9	393
	2222	0.6	18
12	0444	13.0	396
F	1046	-0.6	-18
	1716	13.3	405
	2310	0.3	9
13	0530	13.0	396
Sa	1129	-0.6	-18
	1758	13.3	405
	2353	0.3	9
14	0614	12.8	390
Su	1210	-0.4	-12
	1841	13.1	399
15	0036	0.4	12
M	0657	12.3	375
	1248	0.0	0
	1921	12.7	387
16	0116	0.7	21
Tu	0737	11.7	357
	1328	0.6	18
	2001	12.2	372
17	0155	1.2	37
W	0819	10.9	332
	1406	1.2	37
	2040	11.5	351
18	0238	1.7	52
Th	0901	10.2	311
	1446	2.0	61
	2123	10.9	332
19	0321	2.2	67
F	0951	9.6	293
	1531	2.6	79
	2210	10.3	314
20	0410	2.6	79
Sa	1049	9.1	277
	1624	3.2	98
	2308	9.8	299
21	0509	2.9	88
Su	1153	8.9	271
	1724	3.6	110
22	0011	9.7	296
M	0610	2.9	88
	1301	9.0	274
	1829	3.7	113
23	0114	9.8	299
Tu	0714	2.6	79
	1400	9.5	290
	1935	3.4	104
24	0212	10.2	311
W	0810	2.0	61
	1452	10.2	311
	2033	2.8	85
25	0302	10.7	326
Th	0900	1.4	43
	1537	10.9	332
	2121	2.1	64
26	0347	11.3	344
F	0945	0.7	21
	1619	11.6	354
	2206	1.3	40
27	0432	11.8	360
Sa	1027	0.1	3
	1700	12.2	372
	2250	0.7	21
28	0510	12.2	372
Su	1107	-0.4	-12
	1737	12.7	387
	2330	0.1	3
29	0550	12.4	378
M	1147	-0.6	-18
	1814	13.0	396
30	0011	-0.2	-6
Tu	0629	12.4	378
	1227	-0.7	-21
	1852	13.0	396
31	0054	-0.3	-9
W	0713	12.2	372
	1308	-0.4	-12
	1934	12.8	390

FEBRUARY

Day	Time	Height (ft)	Height (cm)
1	0137	-0.1	-3
Th	0755	11.8	360
	1353	0.0	0
	2019	12.4	378
2	0227	0.2	6
F	0846	11.2	341
	1443	0.7	21
	2112	11.9	363
3	0320	0.7	21
Sa	0946	10.6	323
	1539	1.5	46
	2213	11.2	341
4	0421	1.3	40
Su	1059	10.1	308
	1645	2.1	64
	2325	10.8	329
5	0531	1.6	49
M	1216	10.0	305
	1758	2.5	76
6	0042	10.7	326
Tu	0645	1.5	46
	1327	10.4	317
	1914	2.3	70
7	0151	11.0	335
W	0756	1.1	34
	1431	11.1	338
	2025	1.8	55
8	0250	11.6	354
Th	0856	0.5	15
	1526	11.9	363
	2122	1.1	34
9	0342	12.1	369
F	0945	0.0	0
	1614	12.5	381
	2211	0.5	15
10	0430	12.4	378
Sa	1030	-0.4	-12
	1656	12.9	393
	2254	0.1	3
11	0513	12.6	384
Su	1109	-0.5	-15
	1737	13.1	399
	2332	-0.1	-3
12	0551	12.5	381
M	1145	-0.5	-15
	1814	12.9	393
13	0009	0.0	0
Tu	0631	12.1	369
	1219	-0.2	-6
	1849	12.6	384
14	0044	0.2	6
W	0705	11.6	354
	1254	0.3	9
	1924	12.1	369
15	0121	0.6	18
Th	0742	11.0	335
	1329	0.9	27
	1958	11.5	351
16	0158	1.0	30
F	0819	10.3	314
	1406	1.5	46
	2035	10.8	329
17	0238	1.6	49
Sa	0901	9.6	293
	1446	2.3	70
	2115	10.1	308
18	0323	2.1	64
Su	0952	9.0	274
	1533	2.9	88
	2208	9.5	290
19	0416	2.6	79
M	1058	8.6	262
	1634	3.5	107
	2315	9.1	277
20	0520	2.8	85
Tu	1213	8.6	262
	1745	3.6	110
21	0032	9.1	277
W	0629	2.7	82
	1322	9.1	277
	1858	3.3	101
22	0139	9.6	293
Th	0733	2.2	67
	1420	9.9	302
	2002	2.6	79
23	0235	10.3	314
F	0828	1.4	43
	1508	10.8	329
	2055	1.7	52
24	0324	11.1	338
Sa	0918	0.5	15
	1553	11.7	357
	2142	0.7	21
25	0407	11.8	360
Su	1001	-0.2	-6
	1632	12.6	384
	2227	-0.2	-6
26	0449	12.5	381
M	1044	-0.8	-24
	1712	13.2	402
	2308	-0.8	-24
27	0530	12.8	390
Tu	1125	-1.2	-37
	1750	13.5	411
	2350	-1.2	-37
28	0612	12.9	393
W	1207	-1.2	-37
	1831	13.5	411

MARCH

Day	Time	Height (ft)	Height (cm)
1	0033	-1.2	-37
Th	0654	12.7	387
	1249	-0.9	-27
	1913	13.2	402
2	0118	-0.9	-27
F	0739	12.1	369
	1336	-0.3	-9
	2001	12.6	384
3	0205	-0.3	-9
Sa	0832	11.4	347
	1424	0.6	18
	2053	11.8	360
4	0259	0.5	15
Su	0931	10.6	323
	1523	1.5	46
	2156	10.9	332
5	0402	1.2	37
M	1042	10.0	305
	1629	2.3	70
	2311	10.3	314
6	0511	1.8	55
Tu	1200	9.9	302
	1745	2.7	82
7	0027	10.2	311
W	0629	1.9	58
	1312	10.3	314
	1906	2.5	76
8	0136	10.5	320
Th	0740	1.5	46
	1415	10.9	332
	2017	1.9	58
9	0236	11.0	335
F	0840	1.0	30
	1508	11.6	354
	2110	1.2	37
10	0326	11.6	354
Sa	0929	0.5	15
	1553	12.2	372
	2153	0.6	18
11	0411	12.0	366
Su	1006	0.1	3
	1632	12.6	384
	2231	0.1	3
12	0451	12.2	372
M	1043	-0.1	-3
	1710	12.8	390
	2306	-0.1	-3
13	0528	12.2	372
Tu	1117	-0.1	-3
	1744	12.7	387
	2340	-0.2	-6
14	0603	11.9	363
W	1151	0.1	3
	1817	12.4	378
15	0012	0.0	0
Th	0636	11.6	354
	1223	0.5	15
	1849	12.0	366
16	0046	0.3	9
F	0710	11.1	338
	1257	0.9	27
	1921	11.4	347
17	0121	0.7	21
Sa	0745	10.5	320
	1334	1.5	46
	1953	10.8	329
18	0201	1.3	40
Su	0822	9.8	299
	1411	2.2	67
	2031	10.1	308
19	0240	1.8	55
M	0909	9.3	283
	1459	2.8	85
	2120	9.5	290
20	0333	2.4	73
Tu	1010	8.9	271
	1557	3.3	101
	2223	9.0	274
21	0436	2.7	82
W	1125	8.8	268
	1709	3.5	107
	2348	9.0	274
22	0546	2.7	82
Th	1240	9.2	280
	1821	3.1	94
23	0101	9.4	287
F	0653	2.2	67
	1340	10.1	308
	1928	2.4	73
24	0202	10.2	311
Sa	0751	1.5	46
	1433	11.1	338
	2023	1.3	40
25	0252	11.2	341
Su	0844	0.6	18
	1519	12.1	369
	2113	0.2	6
26	0340	12.1	369
M	0932	-0.2	-6
	1601	13.0	396
	2200	-0.7	-21
27	0425	12.8	390
Tu	1017	-0.8	-24
	1643	13.6	415
	2244	-1.4	-43
28	0508	13.2	402
W	1102	-1.2	-37
	1726	13.9	424
	2328	-1.7	-52
29	0552	13.3	405
Th	1146	-1.1	-34
	1810	13.9	424
30	0014	-1.6	-49
F	0639	13.1	399
	1231	-0.8	-24
	1856	13.4	408
31	0100	-1.2	-37
Sa	0726	12.5	381
	1320	-0.1	-3
	1945	12.7	387

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0150	-0.4	-12	16	0129	1.3	40
Su	0819	11.8	360	M	0757	10.3	314
	1411	0.8	24		1345	2.4	73
	2040	11.7	357		2001	10.3	314
2	0243	0.5	15	17	0211	1.7	52
M	0920	11.0	335	Tu	0840	9.9	302
	1509	1.7	52		1432	2.8	85
	2144	10.8	329		2048	9.8	299
3	0344	1.4	43	18	0301	2.2	67
Tu	1029	10.4	317	W	0936	9.6	293
	1616	2.4	73		1530	3.1	94
	2255	10.2	311		2152	9.4	287
4	0453	2.0	61	19	0357	2.5	76
W	1142	10.3	314	Th	1044	9.6	293
	1733	2.8	85		1634	3.2	98
					2307	9.3	283
5	0010	10.1	308	20	0504	2.6	79
Th	0605	2.2	67	F	1153	9.9	302
	1250	10.5	320		1745	2.8	85
	1850	2.6	79				
6	0117	10.3	314	21	0021	9.7	296
F	0717	2.0	61	Sa	0611	2.3	70
	1349	11.0	335		1255	10.7	325
	1956	2.0	61		1850	2.1	64
7	0215	10.7	326	22	0125	10.5	320
Sa	0815	1.6	49	Su	0712	1.6	49
	1439	11.6	354		1351	11.6	354
	2047	1.4	43		1949	1.1	34
8	0302	11.2	341	23	0221	11.4	347
Su	0900	1.3	40	M	0810	0.9	27
	1524	12.0	366		1444	12.5	381
	2127	0.9	27		2044	0.1	3
9	0347	11.6	354	24	0310	12.3	375
M	0937	0.9	27	Tu	0902	0.2	6
	1603	12.4	378		1532	13.3	405
	2203	0.5	15		2133	-0.7	-21
10	0425	11.8	360	25	0359	13.0	396
Tu	1014	0.8	24	W	0951	-0.4	-12
	1640	12.5	381		1617	13.9	424
	2237	0.2	6		2221	-1.3	-40
11	0501	11.9	363	26	0448	13.4	408
W	1047	0.7	21	Th	1040	-0.7	-21
	1714	12.5	381		1704	14.2	433
	2310	0.1	3		2308	-1.6	-49
12	0537	11.8	360	27	0535	13.6	415
Th	1122	0.8	24	F	1127	-0.6	-18
	1747	12.3	375		1751	14.0	427
	2344	0.2	6		2356	-1.4	-43
13	0611	11.6	354	28	0623	13.4	408
F	1155	1.0	30	Sa	1216	-0.3	-9
	1819	11.9	363		1839	13.6	415
14	0017	0.4	12	29	0044	-1.0	-30
Sa	0644	11.2	341	Su	0714	12.9	393
	1231	1.4	43		1307	0.3	9
	1851	11.4	347		1931	12.8	390
15	0052	0.8	24	30	0134	-0.2	-6
Su	0718	10.8	329	M	0809	12.3	375
	1307	1.9	58		1401	1.1	34
	1924	10.9	332		2027	11.9	363

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0227	0.6	18	16	0150	1.6	49
Tu	0907	11.7	357	W	0819	10.7	326
	1458	1.9	58		1414	2.7	82
	2128	11.1	338		2030	10.4	317
2	0325	1.5	46	17	0235	2.0	61
W	1010	11.2	341	Th	0909	10.6	323
	1602	2.5	76		1507	2.8	85
	2235	10.5	320		2123	10.1	308
3	0429	2.1	64	18	0328	2.2	67
Th	1115	10.9	332	F	1005	10.6	323
	1711	2.8	85		1605	2.8	85
	2344	10.2	311		2229	10.0	305
4	0534	2.5	76	19	0428	2.3	70
F	1217	10.9	332	Sa	1109	10.9	332
	1821	2.7	82		1711	2.5	76
					2342	10.2	311
5	0045	10.3	314	20	0532	2.2	67
Sa	0638	2.6	79	Su	1214	11.4	347
	1314	11.2	341		1815	1.9	58
	1922	2.4	73				
6	0143	10.5	320	21	0047	10.8	329
Su	0735	2.4	73	M	0637	1.9	58
	1404	11.5	351		1312	12.0	366
	2012	2.0	61		1917	1.2	37
7	0233	10.9	332	22	0148	11.5	351
M	0821	2.2	67	Tu	0738	1.4	43
	1449	11.8	360		1410	12.8	390
	2053	1.5	46		2015	0.4	12
8	0318	11.2	341	23	0245	12.3	375
Tu	0902	2.0	61	W	0833	0.8	24
	1530	12.1	369		1503	13.4	408
	2130	1.1	34		2108	-0.4	-12
9	0358	11.5	351	24	0337	13.0	396
W	0942	1.8	55	Th	0929	0.3	9
	1608	12.2	372		1555	13.9	424
	2207	0.8	24		2201	-0.9	-27
10	0436	11.7	357	25	0430	13.4	408
Th	1019	1.7	52	F	1020	0.1	3
	1646	12.2	372		1646	14.1	430
	2243	0.7	21		2251	-1.1	-34
11	0513	11.7	357	26	0520	13.7	418
F	1055	1.7	52	Sa	1112	0.0	0
	1719	12.1	369		1736	14.0	427
	2318	0.7	21		2340	-1.0	-30
12	0548	11.6	354	27	0610	13.6	415
Sa	1132	1.8	55	Su	1203	0.2	6
	1754	11.8	360		1827	13.6	415
	2354	0.8	24				
13	0623	11.4	347	28	0028	-0.7	-21
Su	1209	2.0	61	M	0701	13.4	408
	1828	11.5	351		1254	0.7	21
					1918	13.0	396
14	0030	1.0	30	29	0118	-0.1	-3
M	0700	11.2	341	Tu	0753	12.9	393
	1246	2.2	67		1345	1.2	37
	1902	11.1	338		2011	12.3	375
15	0108	1.3	40	30	0209	0.7	21
Tu	0737	10.9	332	W	0846	12.4	378
	1328	2.5	76		1440	1.8	55
	1942	10.7	326		2107	11.5	351
				31	0301	1.5	46
				Th	0943	11.8	360
					1536	2.4	73
					2206	10.8	329

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0354	2.2	67	16	0302	1.8	55
F	1041	11.4	347	Sa	0935	11.5	351
	1636	2.8	85		1539	2.2	67
	2306	10.4	317		2159	10.6	323
2	0452	2.7	82	17	0357	2.0	61
Sa	1138	11.2	341	Su	1031	11.6	354
	1735	2.9	88		1639	2.1	64
					2305	10.6	323
3	0008	10.2	311	18	0458	2.1	64
Su	0547	3.1	94	M	1135	11.8	360
	1233	11.1	338		1742	1.8	55
	1834	2.8	85				
4	0106	10.2	311	19	0014	10.9	332
M	0643	3.2	98	Tu	0603	2.1	64
	1325	11.3	344		1240	12.1	369
	1927	2.6	79		1847	1.4	43
5	0157	10.5	320	20	0122	11.4	347
Tu	0738	3.1	94	W	0709	1.8	55
	1412	11.4	347		1343	12.6	384
	2015	2.2	67		1948	0.8	24
6	0245	10.8	329	21	0223	12.0	366
W	0825	2.9	88	Th	0812	1.4	43
	1457	11.7	357		1444	13.1	399
	2057	1.8	55		2049	0.2	6
7	0330	11.1	338	22	0321	12.7	387
Th	0910	2.7	82	F	0910	1.0	30
	1539	11.8	360		1538	13.6	415
	2140	1.5	46		2143	-0.3	-9
8	0411	11.4	347	23	0415	13.3	405
F	0951	2.4	73	Sa	1006	0.6	18
	1619	12.0	366		1632	13.8	421
	2217	1.2	37		2235	-0.6	-18
9	0451	11.6	354	24	0507	13.6	415
Sa	1032	2.3	70	Su	1058	0.4	12
	1657	12.0	366		1722	13.9	424
	2256	1.0	30		2325	-0.7	-21
10	0529	11.7	357	25	0556	13.8	421
Su	1112	2.2	67	M	1149	0.4	12
	1735	11.9	363		1812	13.6	415
	2332	1.0	30				
11	0607	11.8	360	26	0012	-0.5	-15
M	1151	2.1	64	Tu	0644	13.6	415
	1812	11.7	357		1238	0.7	21
					1902	13.1	399
12	0012	1.0	30	27	0059	0.0	0
Tu	0641	11.7	357	W	0731	13.3	405
	1231	2.1	64		1326	1.1	34
	1849	11.5	351		1950	12.5	381
13	0049	1.1	34	28	0145	0.6	18
W	0718	11.7	357	Th	0819	12.8	390
	1311	2.1	64		1414	1.6	49
	1926	11.3	344		2038	11.7	357
14	0129	1.3	40	29	0230	1.4	43
Th	0758	11.6	354	F	0907	12.2	372
	1355	2.2	67		1501	2.1	64
	2009	11.0	335		2131	11.0	335
15	0211	1.5	46	30	0317	2.1	64
F	0843	11.6	354	Sa	0957	11.6	354
	1445	2.2	67		1552	2.6	79
	2059	10.8	329		2224	10.4	317

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BUENAVENTURA, COLOMBIA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0405	2.8	85	16 M	0330	1.7	52
	1050	11.1	338		1002	11.8	360
	1645	3.0	91		1610	1.8	55
	2322	10.0	305		2238	10.7	326
2 M	0458	3.3	101	17 Tu	0429	2.1	64
	1145	10.8	329		1106	11.7	357
	1741	3.1	94		1716	1.8	55
					2349	10.7	326
3 Tu	0021	9.8	299	18 W	0538	2.4	73
	0554	3.6	110		1218	11.7	357
	1240	10.7	326		1824	1.7	52
	1840	3.1	94				
4 W	0119	9.9	302	19 Th	0103	11.0	335
	0653	3.7	113		0648	2.3	70
	1335	10.8	329		1327	12.0	366
	1935	2.8	85		1932	1.3	40
5 Th	0212	10.2	311	20 F	0210	11.6	354
	0748	3.5	107		0756	1.9	58
	1425	11.1	338		1429	12.5	381
	2025	2.4	73		2033	0.7	21
6 F	0302	10.7	326	21 Sa	0308	12.4	378
	0841	3.2	98		0857	1.4	43
	1513	11.4	347		1526	13.1	399
	2111	1.9	58		2130	0.1	3
7 Sa	0348	11.2	341	22 Su	0401	13.0	396
	0929	2.8	85		0955	0.8	24
	1556	11.7	357		1619	13.4	408
	2153	1.5	46		2222	-0.3	-9
8 Su	0429	11.6	354	23 M	0451	13.5	411
	1011	2.4	73		1046	0.5	15
	1638	11.9	363		1709	13.6	415
	2233	1.1	34		2308	-0.5	-15
9 M	0508	11.9	363	24 Tu	0538	13.8	421
	1052	2.0	61		1132	0.3	9
	1716	12.1	369		1754	13.5	411
	2312	0.8	24		2351	-0.4	-12
10 Tu	0545	12.2	372	25 W	0622	13.7	418
	1133	1.7	52		1215	0.4	12
	1752	12.1	369		1838	13.1	399
	2351	0.7	21				
11 W	0621	12.3	375	26 Th	0033	0.0	0
	1211	1.5	46		0705	13.4	408
	1828	12.1	369		1257	0.7	21
					1921	12.5	381
12 Th	0028	0.6	18	27 F	0113	0.5	15
	0656	12.4	378		0745	12.9	393
	1252	1.4	43		1341	1.2	37
	1908	11.9	363		2005	11.8	360
13 F	0107	0.7	21	28 Sa	0153	1.2	37
	0734	12.4	378		0827	12.2	372
	1334	1.3	40		1422	1.7	52
	1950	11.7	357		2048	11.0	335
14 Sa	0150	1.0	30	29 Su	0235	2.0	61
	0816	12.3	375		0911	11.5	351
	1419	1.4	43		1506	2.3	70
	2038	11.4	347		2136	10.3	314
15 Su	0238	1.3	40	30 M	0320	2.7	82
	0904	12.1	369		0957	10.8	329
	1512	1.6	49		1557	2.9	88
	2131	11.0	335		2229	9.7	296
				31 Tu	0408	3.4	104
					1052	10.3	314
					1650	3.2	98
					2334	9.4	287

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0506	3.8	116	16 Th	0520	2.6	79
	1155	10.1	308		1203	11.1	338
	1751	3.3	101		1806	2.0	61
2 Th	0040	9.4	287	17 F	0050	10.7	326
	0611	4.0	122		0637	2.6	79
	1258	10.1	308		1315	11.4	347
	1855	3.2	98		1919	1.7	52
3 F	0140	9.8	299	18 Sa	0156	11.4	347
	0714	3.8	116		0748	2.1	64
	1356	10.4	317		1420	12.0	366
	1951	2.7	82		2023	1.1	34
4 Sa	0233	10.3	314	19 Su	0255	12.2	372
	0812	3.3	101		0849	1.5	46
	1447	10.9	332		1516	12.6	384
	2044	2.1	64		2118	0.5	15
5 Su	0321	11.0	335	20 M	0345	12.9	393
	0903	2.7	82		0942	0.8	24
	1533	11.4	347		1604	13.1	399
	2129	1.5	46		2204	0.0	0
6 M	0404	11.7	357	21 Tu	0432	13.4	408
	0950	2.0	61		1029	0.3	9
	1615	11.9	363		1650	13.3	405
	2209	0.9	27		2248	-0.2	-6
7 Tu	0441	12.2	372	22 W	0513	13.6	415
	1031	1.4	43		1111	0.1	3
	1654	12.3	375		1732	13.3	405
	2249	0.4	12		2327	-0.2	-6
8 W	0518	12.7	387	23 Th	0554	13.6	415
	1110	0.9	27		1150	0.1	3
	1732	12.6	384		1812	13.0	396
	2327	0.1	3				
9 Th	0554	13.0	396	24 F	0004	0.1	3
	1149	0.5	15		0632	13.2	402
	1809	12.6	384		1227	0.4	12
					1850	12.4	378
10 F	0006	0.0	0	25 Sa	0041	0.6	18
	0631	13.1	399		0709	12.7	387
	1230	0.3	9		1304	0.8	24
	1849	12.5	381		1929	11.8	360
11 Sa	0046	0.2	6	26 Su	0116	1.2	37
	0710	13.0	396		0745	12.0	366
	1312	0.4	12		1342	1.4	43
	1929	12.2	372		2006	11.0	335
12 Su	0128	0.5	15	27 M	0155	1.9	58
	0753	12.7	387		0824	11.3	344
	1358	0.7	21		1422	2.0	61
	2016	11.7	357		2050	10.3	314
13 M	0214	1.0	30	28 Tu	0235	2.7	82
	0840	12.3	375		0907	10.5	320
	1448	1.1	34		1507	2.7	82
	2112	11.2	341		2139	9.6	293
14 Tu	0307	1.6	49	29 W	0323	3.4	104
	0938	11.7	357		1000	9.9	302
	1546	1.6	49		1600	3.2	98
	2218	10.7	326		2245	9.2	280
15 W	0410	2.3	70	30 Th	0423	3.9	119
	1047	11.3	344		1108	9.5	290
	1653	2.0	61		1705	3.5	107
	2333	10.5	320		2358	9.1	277
				31 F	0531	4.1	125
					1221	9.5	290
					1811	3.4	104

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0106	9.5	290	16 Su	0143	11.4	347
	0642	3.8	116		0743	2.2	67
	1325	10.0	305		1407	11.6	354
	1915	2.9	88		2010	1.5	46
2 Su	0202	10.2	311	17 M	0236	12.2	372
	0743	3.2	98		0839	1.4	43
	1420	10.6	323		1500	12.3	375
	2010	2.2	67		2102	0.9	27
3 M	0249	11.1	338	18 Tu	0325	12.8	390
	0836	2.3	70		0926	0.8	24
	1506	11.4	347		1547	12.7	387
	2057	1.4	43		2143	0.5	15
4 Tu	0332	11.9	363	19 W	0407	13.2	402
	0921	1.4	43		1007	0.3	9
	1548	12.1	369		1630	13.0	396
	2141	0.7	21		2223	0.3	9
5 W	0411	12.6	384	20 Th	0448	13.4	408
	1003	0.6	18		1046	0.1	3
	1630	12.7	387		1707	13.0	396
	2222	0.1	3		2259	0.3	9
6 Th	0448	13.2	402	21 F	0525	13.3	405
	1043	0.0	0		1120	0.1	3
	1707	13.0	396		1746	12.7	387
	2302	-0.3	-9		2334	0.5	15
7 F	0526	13.5	411	22 Sa	0600	13.0	396
	1125	-0.4	-12		1156	0.3	9
	1747	13.2	402		1820	12.3	375
	2343	-0.4	-12				
8 Sa	0606	13.6	415	23 Su	0009	0.9	27
	1207	-0.5	-15		0633	12.5	381
	1828	13.0	396		1231	0.7	21
					1857	11.8	360
9 Su	0023	-0.2	-6	24 M	0044	1.4	43
	0646	13.4	408		0708	11.9	363
	1249	-0.3	-9		1306	1.2	37
	1912	12.6	384		1931	11.1	338
10 M	0108	0.3	9	25 Tu	0121	2.1	64
	0731	12.9	393		0742	11.1	338
	1337	0.2	6		1345	1.8	55
	2001	12.0	366		2011	10.4	317
11 Tu	0155	1.0	30	26 W	0201	2.7	82
	0822	12.2	372		0822	10.4	317
	1427	0.9	27		1427	2.5	76
	2056	11.3	344		2058	9.8	299
12 W	0251	1.8	55	27 Th	0246	3.4	104
	0922	11.5	351		0912	9.8	299
	1528	1.6	49		1517	3.0	91
	2205	10.7	326		2200	9.4	287
13 Th	0356	2.5	76	28 F	0344	3.8	116
	1034	10.9	332		1021	9.3	283
	1637	2.2	67		1621	3.4	104
	2323	10.5	320		2311	9.3	283
14 F	0510	2.9	88	29 Sa	0454	4.0	122
	1153	10.7	326		1138	9.3	283
	1752	2.3	70		1728	3.4	104
15 Sa	0039	10.8	329	30 Su	0022	9.7	296
	0629	2.7	82		0603	3.7	113
	1306	11.1	338		1247	9.7	296
	1906	2.0	61		1834	3.0	91

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0120	10.4	317	16	0212	12.1	369
M	0709	3.0	91	Tu	0820	1.6	49
	1346	10.5	320		1439	11.9	363
	1932	2.4	73		2036	1.6	49
2	0212	11.3	344	17	0300	12.6	384
Tu	0802	2.0	61	W	0905	1.1	34
	1433	11.4	347		1526	12.3	375
	2023	1.5	46		2118	1.3	40
3	0255	12.2	372	18	0342	12.9	393
W	0850	1.0	30	Th	0942	0.7	21
	1518	12.2	372		1605	12.5	381
	2109	0.7	21		2155	1.1	34
4	0337	13.0	396	19	0419	13.0	396
Th	0936	0.1	3	F	1018	0.4	12
	1601	12.9	393		1643	12.6	384
	2153	0.1	3		2232	1.1	34
5	0419	13.6	415	20	0455	13.0	396
F	1018	-0.6	-18	Sa	1053	0.4	12
	1643	13.4	408		1719	12.5	381
	2236	-0.3	-9		2307	1.2	37
6	0459	14.0	427	21	0531	12.7	387
Sa	1102	-1.0	-30	Su	1127	0.5	15
	1725	13.6	415		1754	12.2	372
	2319	-0.4	-12		2341	1.4	43
7	0542	14.0	427	22	0603	12.3	375
Su	1145	-1.0	-30	M	1200	0.8	24
	1809	13.5	411		1831	11.8	360
8	0004	-0.2	-6	23	0016	1.8	55
M	0627	13.7	418	Tu	0636	11.7	357
	1231	-0.7	-21		1237	1.2	37
	1857	13.1	399		1905	11.3	344
9	0052	0.3	9	24	0052	2.3	70
Tu	0713	13.1	399	W	0713	11.1	338
	1320	-0.1	-3		1314	1.7	52
	1947	12.4	378		1942	10.8	329
10	0142	1.1	34	25	0133	2.8	85
W	0808	12.3	375	Th	0750	10.5	320
	1411	0.8	24		1353	2.2	67
	2046	11.7	357		2027	10.3	314
11	0240	1.9	58	26	0219	3.2	98
Th	0912	11.4	347	F	0837	10.0	305
	1512	1.6	49		1443	2.7	82
	2154	11.1	338		2120	10.0	305
12	0346	2.6	79	27	0314	3.6	110
F	1024	10.8	329	Sa	0939	9.5	290
	1621	2.3	70		1539	3.1	94
	2308	10.9	332		2224	9.9	302
13	0459	2.9	88	28	0416	3.7	113
Sa	1139	10.6	323	Su	1049	9.4	287
	1733	2.5	76		1642	3.2	98
					2331	10.1	308
14	0018	11.1	338	29	0524	3.4	104
Su	0618	2.7	82	M	1202	9.8	299
	1248	10.9	332		1747	3.0	91
	1845	2.4	73				
15	0119	11.6	354	30	0034	10.7	326
M	0727	2.2	67	Tu	0629	2.7	82
	1348	11.4	347		1303	10.5	320
	1946	2.0	61		1849	2.5	76
				31	0127	11.5	351
				W	0725	1.8	55
					1359	11.3	344
					1946	1.7	52

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0217	12.4	378	16	0312	12.3	375
Th	0817	0.8	24	F	0915	1.2	37
	1449	12.2	372		1542	11.9	363
	2036	1.0	30		2126	2.0	61
2	0305	13.2	402	17	0352	12.4	378
F	0906	-0.1	-3	Sa	0951	0.9	27
	1534	13.0	396		1620	12.1	369
	2126	0.4	12		2204	1.9	58
3	0350	13.8	421	18	0430	12.4	378
Sa	0955	-0.8	-24	Su	1027	0.8	24
	1622	13.5	411		1658	12.1	369
	2214	-0.1	-3		2241	1.8	55
4	0436	14.2	433	19	0505	12.3	375
Su	1040	-1.2	-37	M	1102	0.7	21
	1707	13.8	421		1735	12.0	366
	2300	-0.2	-6		2318	1.9	58
5	0523	14.2	433	20	0540	12.0	366
M	1128	-1.2	-37	Tu	1138	0.9	27
	1755	13.8	421		1810	11.8	360
	2349	0.0	0		2355	2.1	64
6	0612	13.8	421	21	0615	11.7	357
Tu	1215	-0.8	-24	W	1215	1.1	34
	1846	13.5	411		1846	11.6	354
7	0039	0.4	12	22	0033	2.3	70
W	0702	13.2	402	Th	0649	11.2	341
	1305	-0.2	-6		1252	1.4	43
	1937	12.9	393		1923	11.3	344
8	0131	1.0	30	23	0113	2.5	76
Th	0758	12.4	378	F	0729	10.8	329
	1358	0.6	18		1329	1.8	55
	2035	12.3	375		2001	11.0	335
9	0229	1.7	52	24	0157	2.8	85
F	0859	11.6	354	Sa	0809	10.4	317
	1454	1.4	43		1414	2.2	67
	2139	11.8	360		2046	10.7	326
10	0331	2.3	70	25	0246	3.0	91
Sa	1005	11.0	335	Su	0903	10.0	305
	1557	2.2	67		1503	2.5	76
	2244	11.4	347		2138	10.6	323
11	0439	2.7	82	26	0341	3.0	91
Su	1114	10.6	323	M	1004	9.8	299
	1704	2.6	79		1600	2.7	82
	2348	11.4	347		2239	10.7	326
12	0551	2.7	82	27	0442	2.8	85
M	1221	10.6	323	Tu	1113	9.9	302
	1811	2.8	85		1701	2.7	82
					2342	11.0	335
13	0047	11.5	351	28	0547	2.3	70
Tu	0656	2.4	73	W	1219	10.4	317
	1320	10.9	332		1806	2.5	76
	1912	2.7	82				
14	0140	11.8	360	29	0045	11.6	354
W	0751	2.0	61	Th	0650	1.7	52
	1415	11.2	341		1323	11.1	338
	2002	2.5	76		1909	2.0	61
15	0228	12.1	369	30	0141	12.3	375
Th	0835	1.6	49	F	0746	0.8	24
	1458	11.6	354		1420	11.9	363
	2047	2.2	67		2007	1.4	43

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0236	13.0	396	16	0326	11.6	354
Sa	0841	0.0	0	Su	0927	1.4	43
	1513	12.7	387		1559	11.4	347
	2102	0.8	24		2142	2.4	73
2	0329	13.6	415	17	0407	11.8	360
Su	0934	-0.6	-18	M	1006	1.1	34
	1604	13.3	405		1640	11.7	357
	2155	0.3	9		2222	2.2	67
3	0419	13.9	424	18	0446	11.8	360
M	1023	-1.1	-34	Tu	1043	0.9	27
	1654	13.8	421		1717	11.8	360
	2246	0.0	0		2301	2.0	61
4	0510	14.0	427	19	0523	11.8	360
Tu	1113	-1.2	-37	W	1120	0.8	24
	1744	13.9	424		1753	11.9	363
	2337	0.0	0		2338	1.9	58
5	0559	13.8	421	20	0558	11.6	354
W	1202	-1.0	-30	Th	1154	0.8	24
	1835	13.8	421		1828	11.8	360
6	0028	0.2	6	21	0015	1.8	55
Th	0651	13.3	405	F	0634	11.4	347
	1252	-0.5	-15		1231	0.9	27
	1924	13.4	408		1902	11.7	357
7	0120	0.7	21	22	0054	1.8	55
F	0745	12.7	387	Sa	0711	11.1	338
	1342	0.2	6		1308	1.1	34
	2018	12.9	393		1937	11.6	354
8	0213	1.3	40	23	0134	1.9	58
Sa	0840	11.9	363	Su	0747	10.8	329
	1432	1.0	30		1347	1.4	43
	2112	12.3	375		2016	11.5	351
9	0309	1.8	55	24	0219	2.0	61
Su	0939	11.1	338	M	0830	10.5	320
	1527	1.8	55		1432	1.7	52
	2209	11.7	357		2101	11.3	344
10	0408	2.3	70	25	0307	2.0	61
M	1041	10.5	320	Tu	0925	10.3	314
	1623	2.5	76		1522	2.0	61
	2309	11.3	344		2154	11.2	341
11	0509	2.6	79	26	0405	2.0	61
Tu	1142	10.2	311	W	1029	10.1	308
	1723	3.0	91		1621	2.3	70
					2257	11.2	341
12	0008	11.1	338	27	0508	1.9	58
W	0610	2.6	79	Th	1139	10.2	311
	1245	10.2	311		1727	2.3	70
	1826	3.2	98				
13	0103	11.1	338	28	0003	11.4	347
Th	0710	2.5	76	F	0613	1.6	49
	1340	10.4	317		1250	10.6	323
	1922	3.2	98		1834	2.2	67
14	0156	11.2	341	29	0111	11.8	360
F	0759	2.1	64	Sa	0719	1.0	30
	1431	10.7	326		1356	11.3	344
	2013	3.0	91		1940	1.7	52
15	0241	11.4	347	30	0215	12.3	375
Sa	0847	1.8	55	Su	0820	0.3	9
	1518	11.1	338		1455	12.1	369
	2100	2.7	82		2044	1.1	34
				31	0313	12.9	393
				M	0918	-0.4	-12
					1550	12.9	393
					2142	0.5	15

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BALBOA, PANAMA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height (ft)	Height (cm)
1	0020	1.3	40
M	0624	15.1	460
	1239	0.5	15
	1852	15.6	475
2	0102	1.4	43
Tu	0705	14.9	454
	1321	0.9	27
	1934	15.5	472
3	0150	1.6	49
W	0750	14.5	442
	1409	1.5	46
	2019	15.2	463
4	0243	1.9	58
Th	0840	13.9	424
	1502	2.1	64
	2110	14.8	451
5	0339	2.1	64
F	0939	13.3	405
	1600	2.6	79
	2212	14.5	442
6	0442	2.3	70
Sa	1052	13.0	396
	1704	3.0	91
	2320	14.3	436
7	0549	2.2	67
Su	1208	13.1	399
	1813	3.0	91
8	0032	14.5	442
M	0658	1.8	55
	1317	13.6	415
	1925	2.6	79
9	0135	14.9	454
Tu	0802	1.0	30
	1418	14.3	436
	2028	1.9	58
10	0233	15.4	469
W	0900	0.2	6
	1513	15.0	457
	2124	1.1	34
11	0329	15.8	482
Th	0950	-0.6	-18
	1607	15.7	479
	2212	0.4	12
12	0421	16.1	491
F	1034	-1.0	-30
	1657	16.1	491
	2257	0.0	0
13	0511	16.1	491
Sa	1116	-1.0	-30
	1743	16.3	497
	2341	0.0	0
14	0556	15.9	485
Su	1157	-0.7	-21
	1825	16.1	491
15	0023	0.4	12
M	0639	15.4	469
	1239	0.0	0
	1905	15.7	479
16	0105	1.0	30
Tu	0716	14.7	448
	1318	0.9	27
	1942	15.1	460
17	0150	1.7	52
W	0758	13.8	421
	1401	1.9	58
	2019	14.3	436
18	0235	2.5	76
Th	0838	12.8	390
	1446	2.9	88
	2059	13.4	408
19	0325	3.2	98
F	0923	11.9	363
	1533	3.8	116
	2144	12.6	384
20	0416	3.7	113
Sa	1021	11.2	341
	1629	4.5	137
	2241	12.0	366
21	0515	4.0	122
Su	1132	10.9	332
	1729	4.9	149
	2349	11.9	363
22	0619	3.9	119
M	1242	11.1	338
	1837	4.9	149
23	0053	12.1	369
Tu	0722	3.4	104
	1338	11.7	357
	1943	4.3	131
24	0146	12.6	384
W	0818	2.6	79
	1427	12.5	381
	2036	3.4	104
25	0233	13.3	405
Th	0905	1.6	49
	1513	13.4	408
	2121	2.4	73
26	0318	14.0	427
F	0945	0.7	21
	1553	14.3	436
	2204	1.4	43
27	0401	14.7	448
Sa	1023	-0.1	-3
	1633	15.1	460
	2242	0.5	15
28	0444	15.2	463
Su	1101	-0.7	-21
	1713	15.8	482
	2320	-0.1	-3
29	0527	15.6	475
M	1138	-0.9	-27
	1751	16.2	494
	2359	-0.4	-12
30	0607	15.7	479
Tu	1218	-0.8	-24
	1832	16.4	500
31	0041	-0.4	-12
W	0649	15.5	472
	1259	-0.4	-12
	1913	16.2	494

FEBRUARY

Day	Time	Height (ft)	Height (cm)
1	0127	0.0	0
Th	0731	15.0	457
	1345	0.4	12
	1955	15.7	479
2	0217	0.6	18
F	0821	14.2	433
	1435	1.3	40
	2046	14.9	454
3	0315	1.3	40
Sa	0917	13.3	405
	1536	2.2	67
	2144	14.1	430
4	0416	1.9	58
Su	1028	12.5	381
	1642	3.0	91
	2258	13.4	408
5	0527	2.2	67
M	1153	12.3	375
	175?	3.3	101
6	0018	13.3	405
Tu	0642	2.1	64
	1309	12.7	387
	1914	2.9	88
7	0128	13.7	418
W	0751	1.5	46
	1412	13.5	411
	2020	2.1	64
8	0228	14.3	436
Th	0849	0.6	18
	1508	14.4	439
	2114	1.1	34
9	0321	14.8	451
F	0937	-0.2	-6
	1556	15.1	460
	2200	0.3	9
10	0409	15.3	466
Sa	1019	-0.8	-24
	1640	15.6	475
	2242	-0.3	-9
11	0454	15.5	472
Su	1056	-1.0	-30
	1719	15.9	485
	2319	-0.5	-15
12	0533	15.4	469
M	1134	-0.8	-24
	1756	15.8	482
	2357	-0.3	-9
13	0612	15.1	460
Tu	1209	-0.3	-9
	1831	15.5	472
14	0033	0.2	6
W	0646	14.5	442
	1244	0.4	12
	1902	15.0	457
15	0112	0.9	27
Th	0721	13.8	421
	1321	1.4	43
	1934	14.2	433
16	0153	1.7	52
F	0755	12.9	393
	1401	2.4	73
	2009	13.4	408
17	0235	2.6	79
Sa	0832	12.0	366
	1446	3.4	104
	2045	12.5	381
18	0325	3.3	101
Su	0922	11.1	338
	1538	4.3	131
	2135	11.6	354
19	0424	3.9	119
M	1029	10.5	320
	1640	4.9	149
	2247	11.1	338
20	0531	4.1	125
Tu	1152	10.6	323
	1755	5.0	152
21	0011	11.2	341
W	0640	3.7	113
	1303	11.2	341
	1906	4.4	134
22	0117	11.9	363
Th	0744	2.9	88
	1357	12.2	372
	2007	3.3	101
23	0207	12.8	390
F	0834	1.7	52
	1441	13.4	408
	2057	1.9	58
24	0253	13.8	421
Sa	0918	0.5	15
	1522	14.5	442
	2139	0.6	18
25	0337	14.8	451
Su	0958	-0.5	-15
	1603	15.6	475
	2219	-0.6	-18
26	0421	15.6	475
M	1037	-1.3	-40
	1644	16.4	500
	2258	-1.4	-43
27	0504	16.1	491
Tu	1116	-1.7	-52
	1725	16.9	515
	2339	-1.8	-55
28	0548	16.3	497
W	1156	-1.6	-49
	1807	17.0	518

MARCH

Day	Time	Height (ft)	Height (cm)
1	0020	-1.7	-52
Th	0631	16.0	488
	1239	-1.1	-34
	1851	16.7	509
2	0105	-1.1	-34
F	0716	15.4	469
	1325	-0.1	-3
	1937	15.9	485
3	0155	0.2	-6
Sa	0806	14.4	439
	1417	1.0	30
	2027	14.8	451
4	0253	0.9	27
Su	0902	13.3	405
	1519	2.2	67
	2128	13.7	418
5	0357	1.8	55
M	1016	12.3	375
	1629	3.1	94
	2244	12.8	390
6	0510	2.4	73
Tu	1142	12.1	369
	1747	3.4	104
7	0011	12.6	384
W	0626	2.4	73
	1301	12.6	384
	1903	3.0	91
8	0122	13.0	396
Th	0735	1.9	58
	1403	13.4	408
	2010	2.2	67
9	0220	13.7	418
F	0831	1.1	34
	1452	14.2	433
	2100	1.2	37
10	0308	14.3	436
Sa	0918	0.4	12
	1534	14.9	454
	2142	0.3	9
11	0353	14.7	448
Su	0957	-0.1	-3
	1614	15.3	466
	2220	-0.3	-9
12	0431	15.0	457
M	1033	-0.4	-12
	1649	15.6	475
	2254	-0.5	-15
13	0507	15.0	457
Tu	1107	-0.4	-12
	1724	15.5	472
	2329	-0.5	-15
14	0543	14.8	451
W	1140	0.0	0
	1756	15.3	466
15	0003	-0.1	-3
Th	0615	14.4	439
	1213	0.6	18
	1825	14.8	451
16	0039	0.5	15
F	0647	13.8	421
	1247	1.5	46
	1857	14.2	433
17	0113	1.4	43
Sa	0721	13.1	399
	1324	2.4	73
	1929	13.4	408
18	0155	2.3	70
Su	0758	12.3	375
	1409	3.4	104
	2003	12.6	384
19	0243	3.1	94
M	0840	11.5	351
	1459	4.3	131
	2049	11.7	357
20	0339	3.8	116
Tu	0940	10.9	332
	1602	4.8	146
	2155	11.1	338
21	0445	4.1	125
W	1102	10.8	329
	1715	4.9	149
	2325	11.1	338
22	0555	3.8	116
Th	1218	11.5	351
	1827	4.2	128
23	0041	11.8	360
F	0703	3.1	94
	1317	12.5	381
	1933	3.1	94
24	0135	12.8	390
Sa	0759	2.0	61
	1405	13.8	421
	2023	1.6	49
25	0223	14.0	427
Su	0847	0.7	21
	1447	15.1	460
	2111	0.1	3
26	0309	15.1	460
M	0929	-0.4	-12
	1532	16.2	494
	2153	-1.2	-37
27	0355	16.0	488
Tu	1011	-1.3	-40
	1614	17.1	521
	2235	-2.0	-61
28	0440	16.5	503
W	1052	-1.7	-52
	1700	17.5	533
	2316	-2.4	-73
29	0526	16.7	509
Th	1135	-1.6	-49
	1745	17.4	530
	2359	-2.2	-67
30	0614	16.4	500
F	1220	-1.0	-30
	1831	16.9	515
31	0047	-1.4	-43
Sa	0702	15.7	479
	1308	0.0	0
	1921	16.0	488

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0137	-0.3	-9	16	0126	2.2	67
Su	0755	14.8	451	M	0734	12.9	393
	1403	1.3	40		1340	3.6	110
	2014	14.8	451		1938	12.9	393
2	0235	0.9	27	17	0211	3.0	91
M	0854	13.7	418	Tu	0817	12.3	375
	1507	2.4	73		1432	4.3	131
	2117	13.6	415		2022	12.2	372
3	0341	2.0	61	18	0307	3.6	110
Tu	1005	12.8	390	W	0910	11.9	363
	1618	3.2	98		1535	4.6	140
	2236	12.7	387		2123	11.7	357
4	0453	2.6	79	19	0407	3.9	119
W	1129	12.6	384	Th	1020	11.9	363
	1733	3.4	104		1640	4.5	137
	2357	12.5	381		2243	11.6	354
5	0605	2.8	85	20	0511	3.8	116
Th	1242	13.0	396	F	1131	12.4	378
	1845	3.1	94		1748	3.9	119
					2358	12.2	372
6	0106	12.9	393	21	0616	3.2	98
F	0714	2.5	76	Sa	1232	13.4	408
	1341	13.6	415		1853	2.9	88
	1946	2.4	73				
7	0202	13.4	408	22	0058	13.2	402
Sa	0805	2.0	61	Su	0717	2.3	70
	1426	14.3	436		1322	14.6	445
	2037	1.6	49		1949	1.6	49
8	0247	13.9	424	23	0151	14.3	436
Su	0852	1.4	43	M	0810	1.3	40
	1505	14.8	451		1412	15.8	482
	2118	0.8	24		2039	0.2	6
9	0326	14.3	436	24	0241	15.4	469
M	0929	1.0	30	Tu	0858	0.2	6
	1542	15.1	460		1458	16.8	512
	2153	0.3	9		2126	-1.0	-30
10	0403	14.6	445	25	0327	16.2	494
Tu	1005	0.7	21	W	0945	-0.6	-18
	1615	15.3	466		1546	17.4	530
	2229	0.0	0		2211	-1.9	-58
11	0438	14.7	448	26	0417	16.7	509
W	1038	0.7	21	Th	1031	-1.0	-30
	1650	15.3	466		1635	17.7	539
	2302	0.0	0		2256	-2.2	-67
12	0514	14.6	445	27	0509	16.9	515
Th	1112	0.9	27	F	1116	-1.0	-30
	1722	15.1	460		1725	17.6	536
	2335	0.2	6		2342	-1.9	-58
13	0547	14.3	436	28	0559	16.7	509
F	1146	1.4	43	Sa	1204	-0.4	-12
	1754	14.7	448		1816	17.0	518
14	0010	0.7	21	29	0030	-1.2	-37
Sa	0623	13.9	424	Su	0652	16.1	491
	1222	2.0	61		1255	0.5	15
	1825	14.2	433		1908	16.2	494
15	0046	1.4	43	30	0123	-0.1	-3
Su	0657	13.4	408	M	0745	15.3	466
	1259	2.8	85		1352	1.6	49
	1900	13.6	415		2005	15.0	457

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0221	1.0	30	16	0147	2.7	82
Tu	0843	14.5	442	W	0758	13.4	408
	1454	2.5	76		1413	4.0	122
	2106	13.9	424		2005	13.0	396
2	0323	2.1	64	17	0238	3.2	98
W	0949	13.8	421	Th	0846	13.2	402
	1602	3.2	98		1509	4.1	125
	2217	13.1	399		2059	12.6	384
3	0429	2.8	85	18	0333	3.5	107
Th	1103	13.4	408	F	0941	13.2	402
	1711	3.4	104		1609	4.0	122
	2331	12.8	390		2205	12.5	381
4	0533	3.2	98	19	0432	3.5	107
F	1211	13.5	411	Sa	1046	13.6	415
	1816	3.3	101		1710	3.5	107
					2316	12.8	390
5	0037	12.9	393	20	0532	3.2	98
Sa	0634	3.2	98	Su	1149	14.2	433
	1306	13.9	424		1811	2.7	82
	1914	2.9	88				
6	0131	13.2	402	21	0021	13.5	411
Su	0730	3.0	91	M	0634	2.7	82
	1351	14.2	433		1245	15.2	463
	2004	2.3	70		1914	1.7	52
7	0218	13.6	415	22	0119	14.4	439
M	0818	2.7	82	Tu	0735	2.0	61
	1431	14.6	445		1339	16.1	491
	2049	1.7	52		2010	0.6	18
8	0257	13.9	424	23	0212	15.3	466
Tu	0858	2.3	70	W	0831	1.1	34
	1508	14.8	451		1431	16.9	515
	2126	1.2	37		2101	-0.5	-15
9	0334	14.2	433	24	0305	16.1	491
W	0937	2.1	64	Th	0921	0.4	12
	1542	15.0	457		1522	17.4	530
	2203	0.8	24		2151	-1.2	-37
10	0411	14.3	436	25	0359	16.6	506
Th	1012	1.9	58	F	1012	-0.1	-3
	1616	15.0	457		1615	17.6	536
	2238	0.7	21		2239	-1.6	-49
11	0447	14.4	439	26	0454	16.8	512
F	1048	1.9	58	Sa	1101	-0.2	-6
	1651	14.9	454		1710	17.4	530
	2312	0.8	24		2327	-1.5	-46
12	0524	14.3	436	27	0548	16.8	512
Sa	1124	2.2	67	Su	1150	0.1	3
	1727	14.7	448		1804	17.0	518
	2347	1.1	34				
13	0602	14.2	433	28	0015	-0.9	-27
Su	1201	2.6	79	M	0641	16.5	503
	1801	14.3	436		1241	0.8	24
					1857	16.3	497
14	0023	1.6	49	29	0105	0.0	0
M	0639	14.0	427	Tu	0734	16.0	488
	1241	3.1	94		1337	1.6	49
	1841	13.9	424		1951	15.4	469
15	0102	2.2	67	30	0200	1.0	30
Tu	0718	13.7	418	W	0827	15.3	466
	1324	3.6	110		1435	2.4	73
	1921	13.5	411		2046	14.4	439
				31	0256	2.0	61
				Th	0923	14.6	445
					1536	3.0	91
					2147	13.5	411

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0355	2.9	88	16	0302	2.9	88
F	1024	14.1	430	Sa	0910	14.5	442
	1637	3.4	104		1539	3.2	98
	2252	12.9	393		2131	13.4	408
2	0452	3.5	107	17	0357	3.1	94
Sa	1124	13.8	421	Su	1007	14.5	442
	1736	3.6	110		1636	3.0	91
	2357	12.7	387		2238	13.3	405
3	0549	3.9	119	18	0455	3.2	98
Su	1221	13.8	421	M	1112	14.7	448
	1832	3.5	107		1738	2.6	79
					2349	13.6	415
4	0051	12.8	390	19	0559	3.0	91
M	0645	4.0	122	Tu	1213	15.2	463
	1311	13.9	424		1842	2.0	61
	1927	3.2	98				
5	0143	13.0	396	20	0054	14.2	433
Tu	0738	3.9	119	W	0703	2.6	79
	1351	14.1	430		1314	15.8	482
	2015	2.7	82		1944	1.2	37
6	0224	13.3	405	21	0151	14.9	454
W	0826	3.6	110	Th	0807	2.0	61
	1433	14.3	436		1410	16.4	500
	2057	2.2	67		2042	0.3	9
7	0305	13.7	418	22	0250	15.6	475
Th	0911	3.3	101	F	0905	1.2	37
	1511	14.5	442		1506	16.9	515
	2137	1.7	52		2135	-0.5	-15
8	0345	14.0	427	23	0346	16.2	494
F	0950	2.9	88	Sa	0958	0.6	18
	1550	14.7	448		1603	17.1	521
	2214	1.3	40		2225	-1.0	-30
9	0425	14.2	433	24	0443	16.7	509
Sa	1027	2.7	82	Su	1048	0.3	9
	1627	14.8	451		1658	17.1	521
	2251	1.1	34		2312	-1.1	-34
10	0505	14.5	442	25	0535	16.9	515
Su	1105	2.6	79	M	1137	0.3	9
	1708	14.7	448		1751	16.9	515
	2327	1.2	37		2358	-0.7	-21
11	0545	14.6	445	26	0627	16.8	512
M	1144	2.6	79	Tu	1225	0.7	21
	1748	14.6	445		1843	16.4	500
12	0004	1.4	43	27	0045	0.0	0
Tu	0622	14.6	445	W	0715	16.5	503
	1223	2.8	85		1315	1.3	40
	1825	14.5	442		1931	15.7	479
13	0044	1.7	52	28	0134	0.9	27
W	0659	14.7	448	Th	0801	15.9	485
	1305	3.0	91		1406	2.0	61
	1905	14.2	433		2017	14.8	451
14	0126	2.1	64	29	0222	1.9	58
Th	0739	14.6	445	F	0848	15.1	460
	1353	3.2	98		1459	2.8	85
	1948	14.0	427		2107	13.8	421
15	0211	2.5	76	30	0315	2.9	88
F	0821	14.5	442	Sa	0936	14.4	439
	1442	3.3	101		1554	3.4	104
	2035	13.6	415		2202	12.9	393

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BALBOA, PANAMA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0407	3.7	113	16 M	0325	2.8	85
	1031	13.7	418		0933	14.9	454
	1650	3.8	116		1605	2.6	79
	2304	12.3	375		2208	13.4	408
2 M	0459	4.4	134	17 Tu	0426	3.2	98
	1127	13.3	405		1039	14.7	448
	1745	4.0	122		1709	2.7	82
					2321	13.3	405
3 Tu	0008	12.1	369	18 W	0533	3.4	104
	0557	4.8	146		1149	14.7	448
	1226	13.2	402		1818	2.4	73
	1845	3.9	119				
4 W	0103	12.3	375	19 Th	0035	13.7	418
	0656	4.8	146		0645	3.2	98
	1314	13.4	408		1258	15.1	460
	1941	3.6	110		1927	1.8	55
5 Th	0154	12.7	387	20 F	0141	14.4	439
	0754	4.5	137		0754	2.6	79
	1359	13.6	415		1359	15.6	475
	2031	3.0	91		2028	1.0	30
6 F	0239	13.2	402	21 Sa	0241	15.2	463
	0844	4.0	122		0855	1.7	52
	1444	14.0	427		1458	16.2	494
	2113	2.3	70		2124	0.1	3
7 Sa	0321	13.7	418	22 Su	0337	15.9	485
	0929	3.4	104		0947	0.9	27
	1526	14.4	439		1553	16.6	506
	2153	1.6	49		2211	-0.5	-15
8 Su	0403	14.2	433	23 M	0430	16.5	503
	1009	2.8	85		1035	0.3	9
	1607	14.7	448		1646	16.8	512
	2231	1.2	37		2256	-0.8	-24
9 M	0444	14.7	448	24 Tu	0519	16.9	515
	1047	2.3	70		1120	0.1	3
	1649	15.0	457		1735	16.8	512
	2308	0.9	27		2338	-0.7	-21
10 Tu	0522	15.2	463	25 W	0604	16.9	515
	1125	1.9	58		1204	0.3	9
	1728	15.2	463		1820	16.4	500
	2344	0.8	24				
11 W	0600	15.5	472	26 Th	0019	-0.1	-3
	1203	1.8	55		0647	16.6	506
	1809	15.2	463		1247	0.8	24
					1902	15.7	479
12 Th	0023	0.9	27	27 F	0101	0.8	24
	0637	15.7	479		0726	16.0	488
	1244	1.8	55		1332	1.6	49
	1847	15.1	460		1945	14.9	454
13 F	0100	1.3	40	28 Sa	0145	1.8	55
	0715	15.7	479		0806	15.2	463
	1326	2.0	61		1419	2.5	76
	1928	14.8	451		2024	13.9	424
14 Sa	0145	1.7	52	29 Su	0229	2.9	88
	0755	15.6	475		0846	14.3	436
	1414	2.2	67		1507	3.3	101
	2014	14.4	439		2110	12.9	393
15 Su	0232	2.2	67	30 M	0320	3.9	119
	0840	15.3	466		0931	13.4	408
	1507	2.4	73		1600	4.0	122
	2104	13.9	424		2205	12.0	366
				31 Tu	0413	4.7	143
					1028	12.7	387
					1657	4.4	134
					2314	11.6	354

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0511	5.3	162	16 Th	0518	3.8	116
	1134	12.4	378		1137	14.0	427
	1800	4.5	137		1803	2.9	88
2 Th	0024	11.6	354	17 F	0029	13.3	405
	0618	5.4	165		0634	3.6	110
	1240	12.5	381		1253	14.4	439
	1903	4.2	128		1914	2.4	73
3 F	0125	12.1	369	18 Sa	0138	14.1	430
	0723	5.0	152		0746	2.9	88
	1335	13.0	396		1356	15.0	457
	2002	3.5	107		2018	1.5	46
4 Sa	0212	12.9	393	19 Su	0234	15.0	457
	0820	4.3	131		0844	1.8	55
	1420	13.6	415		1452	15.7	479
	2049	2.6	79		2109	0.6	18
5 Su	0257	13.7	418	20 M	0326	15.9	485
	0905	3.3	101		0935	0.9	27
	1505	14.2	433		1542	16.2	494
	2132	1.7	52		2154	-0.1	-3
6 M	0337	14.5	442	21 Tu	0411	16.5	503
	0948	2.4	73		1018	0.2	6
	1545	14.9	454		1630	16.5	503
	2208	0.9	27		2236	-0.4	-12
7 Tu	0415	15.3	466	22 W	0455	16.8	512
	1026	1.5	46		1059	-0.1	-3
	1627	15.4	469		1713	16.5	503
	2245	0.4	12		2315	-0.4	-12
8 W	0454	15.9	485	23 Th	0536	16.8	512
	1103	0.9	27		1138	0.0	0
	1706	15.8	482		1753	16.2	494
	2321	0.1	3		2353	0.1	3
9 Th	0532	16.4	500	24 F	0613	16.5	503
	1140	0.5	15		1217	0.5	15
	1745	16.0	488		1831	15.6	475
	2358	0.1	3				
10 F	0609	16.6	506	25 Sa	0029	0.9	27
	1219	0.5	15		0649	15.9	485
	1826	15.9	485		1255	1.3	40
					1908	14.8	451
11 Sa	0036	0.4	12	26 Su	0108	1.9	58
	0649	16.6	506		0724	15.1	460
	1302	0.7	21		1336	2.2	67
	1907	15.6	475		1945	13.9	424
12 Su	0118	1.0	30	27 M	0147	3.0	91
	0729	16.3	497		0758	14.2	433
	1347	1.2	37		1422	3.2	98
	1952	15.0	457		2025	12.9	393
13 M	0206	1.8	55	28 Tu	0232	4.1	125
	0816	15.7	479		0838	13.3	405
	1440	1.9	58		1512	4.1	125
	2043	14.2	433		2112	12.0	366
14 Tu	0301	2.7	82	29 W	0327	5.0	152
	0910	14.9	454		0979	12.4	378
	1541	2.5	76		1610	4.7	143
	2147	13.4	408		2218	11.4	347
15 W	0405	3.4	104	30 Th	0429	5.6	171
	1018	14.2	433		1041	11.8	360
	1650	2.9	88		1717	4.9	149
	2307	13.0	396		2342	11.4	347
				31 F	0541	5.7	174
					1201	11.9	363
					1826	4.7	143

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0050	12.0	366	16 Su	0130	14.3	436
	0650	5.2	158		0735	2.9	88
	1306	12.5	381		1351	14.7	448
	1927	3.9	119		2002	2.0	61
2 Su	0143	12.9	393	17 M	0221	15.2	463
	0751	4.3	131		0831	1.9	58
	1356	13.4	408		1441	15.4	469
	2018	2.9	88		2052	1.2	37
3 M	0226	13.9	424	18 Tu	0307	15.9	485
	0839	3.0	91		0918	1.0	30
	1439	14.3	436		1526	15.9	485
	2101	1.8	55		2134	0.6	18
4 Tu	0303	15.0	457	19 W	0348	16.4	500
	0921	1.8	55		0958	0.3	9
	1518	15.2	463		1606	16.2	494
	2140	0.8	24		2211	0.3	9
5 W	0343	15.9	485	20 Th	0425	16.6	506
	0958	0.7	21		1034	0.1	3
	1558	16.0	488		1647	16.2	494
	2217	0.1	3		2248	0.3	9
6 Th	0420	16.7	509	21 F	0502	16.6	506
	1038	-0.1	-3		1111	0.1	3
	1639	16.5	503		1724	15.9	485
	2254	-0.4	-12		2322	0.7	21
7 F	0501	17.2	524	22 Sa	0538	16.3	497
	1115	-0.6	-18		1146	0.6	18
	1720	16.7	509		1759	15.5	472
	2333	-0.4	-12		2357	1.4	43
8 Sa	0540	17.4	530	23 Su	0610	15.7	479
	1154	-0.6	-18		1222	1.3	40
	1803	16.6	506		1833	14.8	451
9 Su	0013	0.0	0	24 M	0033	2.3	70
	0623	17.2	524		0644	15.0	457
	1238	-0.1	-3		1300	2.1	64
	1847	16.2	494		1910	14.0	427
10 M	0057	0.8	24	25 Tu	0110	3.3	101
	0707	16.7	509		0718	14.2	433
	1324	0.7	21		1339	3.1	94
	1934	15.4	469		1947	13.2	402
11 Tu	0147	1.8	55	26 W	0155	4.3	131
	0753	15.8	482		0755	13.3	405
	1421	1.6	49		1430	4.0	122
	2030	14.4	439		2030	12.4	378
12 W	0246	2.8	85	27 Th	0248	5.2	158
	0854	14.7	448		0840	12.4	378
	1523	2.6	79		1528	4.8	146
	2136	13.5	411		2131	11.8	360
13 Th	0355	3.7	113	28 F	0354	5.7	174
	1008	13.8	421		0949	11.8	360
	1636	3.2	98		1633	5.1	155
	2301	13.1	399		2252	11.7	357
14 F	0511	4.0	122	29 Sa	0504	5.7	174
	1133	13.6	415		1118	11.7	357
	1750	3.2	98		1741	4.9	149
15 Sa	0024	13.5	411	30 Su	0008	12.2	372
	0629	3.7	113		0613	5.2	158
	1250	14.0	427		1229	12.4	378
	1901	2.8	85		1845	4.2	128

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0101	13.2	402	16	0159	15.3	466
M	0714	4.1	125	Tu	0812	2.1	64
	1322	13.4	408		1423	15.0	457
	1938	3.3	101		2028	2.1	64
2	0146	14.4	439	17	0241	15.8	482
Tu	0804	2.8	85	W	0855	1.4	43
	1405	14.5	442		1505	15.4	469
	2026	2.1	64		2109	1.6	49
3	0227	15.5	472	18	0318	16.1	491
W	0850	1.4	43	Th	0934	0.8	24
	1449	15.5	472		1542	15.6	475
	2108	1.0	30		2146	1.4	43
4	0308	16.6	506	19	0355	16.2	494
Th	0931	0.2	6	F	1009	0.5	15
	1529	16.4	500		1619	15.6	475
	2148	0.2	6		2222	1.3	40
5	0348	17.4	530	20	0430	16.1	491
F	1011	-0.7	-21	Sa	1044	0.5	15
	1613	17.0	518		1655	15.5	472
	2228	-0.4	-12		2255	1.6	49
6	0431	17.9	546	21	0504	15.9	485
Sa	1051	-1.2	-37	Su	1118	0.8	24
	1657	17.2	524		1732	15.2	463
	2309	-0.5	-15		2331	2.0	61
7	0514	18.0	549	22	0537	15.4	469
Su	1133	-1.2	-37	M	1153	1.4	43
	1743	17.1	521		1806	14.8	451
	2352	0.0	0				
8	0601	17.6	536	23	0006	2.7	82
M	1218	-0.6	-18	Tu	0612	14.9	454
	1831	16.6	506		1230	2.1	64
					1844	14.2	433
9	0039	0.8	24	24	0044	3.5	107
Tu	0649	16.9	515	W	0647	14.2	433
	1307	0.4	12		1310	2.9	88
	1924	15.8	482		1921	13.6	415
10	0132	1.9	58	25	0128	4.3	131
W	0742	15.8	482	Th	0724	13.4	408
	1403	1.5	46		1355	3.8	116
	2021	14.8	451		2006	13.0	396
11	0235	2.9	88	26	0219	5.0	152
Th	0843	14.7	448	F	0809	12.7	387
	1509	2.5	76		1451	4.4	134
	2130	14.0	427		2056	12.6	384
12	0347	3.7	113	27	0320	5.4	165
F	0959	13.8	421	Sa	0907	12.1	369
	1620	3.2	98		1549	4.8	146
	2253	13.6	415		2202	12.4	378
13	0501	3.9	119	28	0424	5.4	165
Sa	1122	13.5	411	Su	1024	12.0	366
	1732	3.4	104		1653	4.8	146
					2311	12.8	390
14	0008	14.0	427	29	0530	4.8	146
Su	0613	3.6	110	M	1143	12.4	378
	1237	13.9	424		1757	4.3	131
	1840	3.2	98				
15	0111	14.6	445	30	0013	13.6	415
M	0717	2.9	88	Tu	0629	3.9	119
	1335	14.5	442		1240	13.4	408
	1938	2.7	82		1853	3.5	107
				31	0103	14.7	448
				W	0725	2.7	82
					1330	14.5	442
					1948	2.5	76

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0148	15.9	485	16	0249	15.4	469
Th	0815	1.4	43	F	0911	1.6	49
	1416	15.5	472		1518	14.7	448
	2034	1.5	46		2121	2.5	76
2	0234	16.9	515	17	0326	15.5	472
F	0903	0.1	3	Sa	0948	1.2	37
	1503	16.4	500		1556	14.9	454
	2121	0.6	18		2158	2.3	70
3	0318	17.7	539	18	0401	15.4	469
Sa	0948	-0.8	-24	Su	1022	1.0	30
	1550	17.0	518		1633	14.9	454
	2206	0.0	0		2235	2.3	70
4	0406	18.1	552	19	0438	15.3	466
Su	1030	-1.4	-43	M	1057	1.1	34
	1639	17.3	527		1711	14.9	454
	2251	-0.2	-6		2310	2.5	76
5	0455	18.1	552	20	0514	15.1	460
M	1116	-1.4	-43	Tu	1132	1.3	40
	1729	17.3	527		1746	14.7	448
	2338	0.1	3		2347	2.8	85
6	0546	17.7	539	21	0550	14.7	448
Tu	1202	-0.9	-27	W	1209	1.8	55
	1822	16.9	515		1823	14.5	442
7	0027	0.7	21	22	0025	3.3	101
W	0639	16.9	515	Th	0627	14.2	433
	1252	0.1	3		1247	2.4	73
	1916	16.3	497		1901	14.1	430
8	0121	1.7	52	23	0108	3.8	116
Th	0734	16.0	488	F	0705	13.7	418
	1350	1.2	37		1329	3.0	91
	2014	15.5	472		1940	13.8	421
9	0222	2.6	79	24	0155	4.2	128
F	0835	14.9	454	Sa	0749	13.2	402
	1451	2.2	67		1417	3.6	110
	2115	14.7	448		2025	13.5	411
10	0331	3.3	101	25	0246	4.5	137
Sa	0944	14.0	427	Su	0838	12.8	390
	1557	3.0	91		1510	4.0	122
	2227	14.3	436		2117	13.4	408
11	0439	3.6	110	26	0345	4.5	137
Su	1100	13.5	411	M	0936	12.5	381
	1703	3.4	104		1608	4.2	128
	2339	14.2	433		2218	13.5	411
12	0547	3.5	107	27	0445	4.1	125
M	1211	13.5	411	Tu	1047	12.6	384
	1807	3.6	110		1705	4.0	122
					2319	14.0	427
13	0039	14.5	442	28	0545	3.5	107
Tu	0648	3.1	94	W	1155	13.2	402
	1309	13.9	424		1805	3.6	110
	1906	3.4	104				
14	0130	14.9	454	29	0019	14.7	448
W	0743	2.6	79	Th	0646	2.6	79
	1357	14.2	433		1253	14.0	427
	1956	3.1	94		2012	2.9	88
15	0212	15.2	463	30	0114	15.7	479
Th	0828	2.1	64	F	0743	1.5	46
	1441	14.5	442		1348	15.0	457
	2041	2.8	85		2004	2.0	61

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0204	16.5	503	16	0300	14.4	439
Sa	0837	0.3	9	Su	0924	1.7	52
	1439	15.9	485		1537	14.0	427
	2057	1.1	34		2137	2.9	88
2	0255	17.2	524	17	0340	14.5	442
Su	0926	-0.7	-21	M	1003	1.3	40
	1532	16.6	506		1615	14.3	436
	2148	0.3	9		2217	2.6	79
3	0348	17.6	536	18	0419	14.6	445
M	1014	-1.3	-40	Tu	1038	1.0	30
	1625	17.0	518		1654	14.5	442
	2236	-0.1	-3		2254	2.4	73
4	0441	17.7	539	19	0457	14.7	448
Tu	1101	-1.5	-46	W	1114	1.0	30
	1719	17.2	524		1732	14.7	448
	2325	-0.1	-3		2330	2.3	70
5	0535	17.4	530	20	0534	14.6	445
W	1148	-1.2	-37	Th	1150	1.1	34
	1812	17.1	521		1807	14.7	448
6	0015	0.3	9	21	0007	2.4	73
Th	0631	16.9	515	F	0612	14.4	439
	1239	-0.5	-15		1225	1.4	43
	1905	16.7	509		1843	14.7	448
7	0108	1.0	30	22	0047	2.6	79
F	0724	16.1	491	Sa	0648	14.1	430
	1332	0.5	15		1305	1.9	58
	1958	16.1	491		1918	14.6	445
8	0206	1.8	55	23	0129	2.8	85
Sa	0817	15.1	460	Su	0726	13.8	421
	1427	1.5	46		1347	2.4	73
	2053	15.3	466		1957	14.4	439
9	0304	2.5	76	24	0216	3.1	94
Su	0917	14.1	430	M	0809	13.4	408
	1525	2.5	76		1432	2.8	85
	2151	14.6	445		2038	14.2	433
10	0407	3.0	91	25	0307	3.2	98
M	1021	13.3	405	Tu	0856	13.0	396
	1626	3.3	101		1524	3.2	98
	2255	14.1	430		2130	14.1	430
11	0509	3.4	104	26	0402	3.1	94
Tu	1128	12.9	393	W	1000	12.8	390
	1723	3.9	119		1621	3.4	104
	2357	13.8	421		2231	14.0	427
12	0609	3.4	104	27	0503	2.9	88
W	1233	12.8	390	Th	1111	12.8	390
	1823	4.1	125		1725	3.4	104
					2339	14.3	436
13	0051	13.9	424	28	0608	2.4	73
Th	0706	3.2	98	F	1221	13.3	405
	1327	13.0	396		1832	3.1	94
	1919	4.1	125				
14	0138	14.0	427	29	0042	14.9	454
F	0759	2.8	85	Sa	0714	1.6	49
	1412	13.3	405		1325	14.1	430
	2012	3.8	116		1939	2.4	73
15	0220	14.2	433	30	0143	15.6	475
Sa	0844	2.3	70	Su	0815	0.6	18
	1455	13.6	415		1423	15.0	457
	2057	3.4	104		2041	1.4	43
				31	0241	16.2	494
				M	0912	-0.4	-12
					1521	15.8	482
					2135	0.5	15

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTARENAS, COSTA RICA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0525	8.8	268	16 Tu	0006	0.6	18
	1133	0.1	3		0614	8.5	259
	1755	9.0	274		1217	0.3	9
	2359	0.6	18		1841	8.9	271
2 Tu	0609	8.6	262	17 W	0048	0.9	27
	1214	0.2	6		0659	8.0	244
	1838	9.0	274		1259	0.8	24
					1923	8.5	259
3 W	0043	0.7	21	18 Th	0132	1.3	40
	0654	8.3	253		0741	7.4	226
	1256	0.4	12		1339	1.3	40
	1923	9.0	274		2008	8.1	247
4 Th	0133	0.8	24	19 F	0221	1.7	52
	0744	8.0	244		0832	6.9	210
	1346	0.7	21		1424	1.9	58
	2013	8.9	271		2055	7.7	235
5 F	0229	1.0	30	20 Sa	0313	2.0	61
	0842	7.7	235		0927	6.5	198
	1439	1.0	30		1514	2.3	70
	2111	8.7	265		2150	7.4	226
6 Sa	0330	1.1	34	21 Su	0412	2.1	64
	0945	7.5	229		1031	6.3	192
	1542	1.3	40		1614	2.6	79
	2215	8.6	262		2250	7.2	219
7 Su	0436	1.1	34	22 M	0517	2.1	64
	1055	7.4	226		1137	6.3	192
	1648	1.4	43		1720	2.7	82
	2320	8.6	262		2351	7.3	223
8 M	0544	0.9	27	23 Tu	0615	1.9	58
	1202	7.6	232		1236	6.6	201
	1759	1.3	40		1823	2.4	73
9 Tu	0025	8.8	268	24 W	0047	7.6	232
	0649	0.6	18		0710	1.5	46
	1308	8.0	244		1329	7.1	216
	1905	1.1	34		1918	2.0	61
10 W	0126	9.0	274	25 Th	0137	8.0	244
	0748	0.2	6		0755	1.0	30
	1406	8.5	259		1414	7.6	232
	2006	0.8	24		2006	1.5	46
11 Th	0222	9.3	283	26 F	0222	8.4	256
	0840	-0.2	-6		0836	0.5	15
	1459	8.9	271		1454	8.2	250
	2100	0.5	15		2051	1.0	30
12 F	0313	9.4	287	27 Sa	0304	8.7	265
	0929	-0.4	-12		0916	0.1	3
	1547	9.3	283		1534	8.7	265
	2150	0.3	9		2133	0.5	15
13 Sa	0402	9.4	287	28 Su	0345	9.0	274
	1013	-0.5	-15		0952	-0.2	-6
	1633	9.4	287		1612	9.2	280
	2237	0.2	6		2215	0.1	3
14 Su	0447	9.3	283	29 M	0425	9.2	280
	1057	-0.4	-12		1031	-0.5	-15
	1718	9.4	287		1651	9.5	290
	2322	0.3	9		2254	-0.2	-6
15 M	0531	9.0	274	30 Tu	0507	9.2	280
	1137	-0.1	-3		1111	-0.5	-15
	1800	9.2	280		1730	9.7	296
					2337	-0.2	-6
				31 W	0549	9.0	274
					1150	-0.4	-12
					1813	9.6	293

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0022	-0.1	-3	16 F	0050	0.9	27
	0632	8.7	265		0702	7.4	226
	1234	-0.1	-3		1256	1.2	37
	1858	9.4	287		1920	8.0	244
2 F	0109	0.2	6	17 Sa	0131	1.3	40
	0722	8.2	250		0746	6.9	210
	1322	0.3	9		1336	1.7	52
	1947	9.0	274		2005	7.5	229
3 Sa	0204	0.6	18	18 Su	0221	1.8	55
	0816	7.7	235		0836	6.4	195
	1415	0.9	27		1424	2.2	67
	2045	8.6	262		2057	7.1	216
4 Su	0305	1.0	30	19 M	0316	2.1	64
	0922	7.3	223		0940	6.1	186
	1519	1.4	43		1522	2.6	79
	2153	8.2	250		2201	6.8	207
5 M	0414	1.2	37	20 Tu	0424	2.2	67
	1036	7.1	216		1053	6.1	186
	1633	1.6	49		1637	2.7	82
	2306	8.0	244		2311	6.9	210
6 Tu	0530	1.2	37	21 W	0533	2.0	61
	1152	7.3	223		1200	6.4	195
	1751	1.6	49		1750	2.4	73
7 W	0018	8.1	247	22 Th	0015	7.2	219
	0639	0.9	27		0633	1.6	49
	1300	7.7	235		1255	7.0	213
	1902	1.3	40		1850	1.9	58
8 Th	0121	8.4	256	23 F	0109	7.6	232
	0740	0.5	15		0721	1.0	30
	1358	8.2	250		1342	7.7	235
	2001	0.9	27		1942	1.2	37
9 F	0214	8.7	265	24 Sa	0155	8.2	250
	0830	0.1	3		0804	0.4	12
	1449	8.7	265		1423	8.4	256
	2051	0.4	12		2027	0.4	12
10 Sa	0302	8.9	271	25 Su	0240	8.7	265
	0915	-0.2	-6		0846	-0.1	-3
	1531	9.1	277		1504	9.1	277
	2137	0.1	3		2107	-0.2	-6
11 Su	0347	9.1	277	26 M	0321	9.1	277
	0955	-0.4	-12		0925	-0.6	-18
	1612	9.3	283		1543	9.6	293
	2218	0.0	0		2150	-0.7	-21
12 M	0425	9.0	274	27 Tu	0402	9.4	287
	1032	-0.3	-9		1005	-0.9	-27
	1651	9.4	287		1623	10.0	305
	2257	0.0	0		2232	-0.9	-27
13 Tu	0505	8.8	268	28 W	0443	9.4	287
	1107	-0.1	-3		1046	-0.9	-27
	1728	9.2	280		1705	10.1	308
	2334	0.2	6		2316	-1.0	-30
14 W	0544	8.4	256				
	1144	0.2	6				
	1805	8.9	271				
15 Th	0011	0.5	15				
	0622	8.0	244				
	1219	0.7	21				
	1842	8.5	259				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0527	9.2	280	16 F	0550	7.9	241
	1129	-0.8	-24		1144	0.7	21
	1750	9.9	302		1803	8.3	253
2 F	0001	-0.7	-21	17 Sa	0014	0.6	18
	0614	8.8	268		0627	7.4	226
	1214	-0.4	-12		1219	1.2	37
	1835	9.5	290		1840	7.9	241
3 Sa	0048	-0.2	-6	18 Su	0053	1.1	34
	0704	8.3	253		0709	6.9	210
	1302	0.2	6		1301	1.7	52
	1928	8.9	271		1923	7.4	226
4 Su	0144	0.3	9	19 M	0136	1.5	46
	0800	7.7	235		0757	6.5	198
	1359	0.9	27		1347	2.1	64
	2029	8.2	250		2015	6.9	210
5 M	0245	0.9	27	20 Tu	0232	1.9	58
	0908	7.2	219		0900	6.2	189
	1508	1.5	46		1447	2.4	73
	2138	7.7	235		2119	6.7	204
6 Tu	0400	1.3	40	21 W	0338	2.0	61
	1027	7.0	213		1009	6.2	189
	1627	1.8	55		1601	2.5	76
	2256	7.5	229		2229	6.6	201
7 W	0519	1.3	40	22 Th	0445	1.9	58
	1143	7.2	219		1117	6.6	201
	1748	1.6	49		1714	2.1	64
					2338	6.9	210
8 Th	0010	7.6	232	23 F	0548	1.6	49
	0628	1.0	30		1212	7.2	219
	1249	7.7	235		1816	1.5	46
	1857	1.2	37				
9 F	0110	7.9	241	24 Sa	0034	7.4	226
	0724	0.6	18		0641	1.0	30
	1342	8.2	250		1303	7.9	241
	1951	0.8	24		1908	0.8	24
10 Sa	0201	8.2	250	25 Su	0124	8.0	244
	0812	0.3	9		0727	0.4	12
	1427	8.6	262		1348	8.7	265
	2036	0.4	12		1955	0.0	0
11 Su	0246	8.5	259	26 M	0209	8.6	262
	0851	0.0	0		0811	-0.2	-6
	1508	9.0	274		1430	9.4	287
	2118	0.1	3		2040	-0.7	-21
12 M	0324	8.6	262	27 Tu	0254	9.1	277
	0928	-0.1	-3		0854	-0.7	-21
	1545	9.1	277		1512	10.0	305
	2153	-0.1	-3		2125	-1.1	-34
13 Tu	0403	8.6	262	28 W	0337	9.4	287
	1003	-0.1	-3		0937	-1.0	-30
	1619	9.2	280		1556	10.3	314
	2228	-0.1	-3		2208	-1.4	-43
14 W	0437	8.5	259	29 Th	0422	9.5	290
	1037	0.1	3		1021	-1.0	-30
	1654	9.0	274		1641	10.3	314
	2302	0.0	0		2254	-1.3	-40
15 Th	0513	8.2	250	30 F	0507	9.3	283
	1109	0.3	9		1107	-0.8	-24
	1728	8.7	265		1728	10.0	305
	2337	0.3	9		2342	-1.0	-30
				31 Sa	0556	8.9	271
					1157	-0.3	-9
					1817	9.4	287

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0032	-0.4	-12	16 M	0024	0.9	27
	0650	8.4	256		0646	7.1	216
	1251	0.3	9		1236	1.7	52
	1912	8.7	265		1854	7.4	226
2 M	0128	0.2	6	17 Tu	0109	1.3	40
	0749	7.8	238		0731	6.8	207
	1351	1.0	30		1323	2.0	61
	2016	8.0	244		1944	7.0	213
3 Tu	0232	0.8	24	18 W	0159	1.6	49
	0900	7.4	226		0827	6.7	204
	1503	1.5	46		1423	2.2	67
	2128	7.5	229		2045	6.8	207
4 W	0346	1.2	37	19 Th	0257	1.8	55
	1015	7.3	223		0929	6.8	207
	1623	1.7	52		1529	2.2	67
	2244	7.3	223		2152	6.8	207
5 Th	0500	1.3	40	20 F	0400	1.7	52
	1125	7.5	229		1032	7.1	216
	1740	1.5	46		1637	1.8	55
	2354	7.3	223		2257	7.0	213
6 F	0607	1.2	37	21 Sa	0500	1.5	46
	1226	7.8	238		1128	7.7	235
	1842	1.2	37		1738	1.2	37
					2356	7.4	226
7 Sa	0052	7.6	232	22 Su	0556	1.0	30
	0658	0.9	27		1220	8.3	253
	1316	8.2	250		1833	0.6	18
	1931	0.8	24				
8 Su	0140	7.9	241	23 M	0049	8.0	244
	0745	0.7	21		0647	0.5	15
	1359	8.5	259		1310	9.1	277
	2012	0.4	12		1924	-0.1	-3
9 M	0222	8.1	247	24 Tu	0137	8.5	259
	0822	0.5	15		0737	-0.1	-3
	1438	8.8	268		1357	9.7	296
	2049	0.2	6		2011	-0.7	-21
10 Tu	0259	8.2	250	25 W	0225	9.0	274
	0858	0.4	12		0825	-0.5	-15
	1515	8.9	271		1443	10.1	308
	2126	0.0	0		2058	-1.2	-37
11 W	0337	8.3	253	26 Th	0314	9.3	283
	0933	0.4	12		0912	-0.7	-21
	1548	8.9	271		1531	10.3	314
	2159	0.0	0		2147	-1.3	-40
12 Th	0412	8.2	250	27 F	0401	9.4	287
	1006	0.5	15		1000	-0.7	-21
	1622	8.8	268		1619	10.2	311
	2233	0.1	3		2235	-1.2	-37
13 F	0447	8.0	244	28 Sa	0452	9.3	283
	1040	0.7	21		1051	-0.5	-15
	1657	8.6	262		1710	9.9	302
	2308	0.3	9		2325	-0.9	-27
14 Sa	0524	7.8	238	29 Su	0544	9.1	277
	1116	1.0	30		1144	0.0	0
	1732	8.3	253		1803	9.3	283
	2345	0.6	18				
15 Su	0603	7.4	226	30 M	0017	-0.4	-12
	1154	1.4	43		0640	8.7	265
	1811	7.9	241		1240	0.5	15
					1859	8.7	265

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0114	0.2	6	16 W	0046	1.1	34
	0741	8.3	253		0709	7.5	229
	1344	1.0	30		1307	1.8	55
	2002	8.0	244		1923	7.4	226
2 W	0216	0.7	21	17 Th	0128	1.3	40
	0845	7.9	241		0759	7.5	229
	1453	1.4	43		1402	1.9	58
	2110	7.5	229		2016	7.2	219
3 Th	0322	1.2	37	18 F	0221	1.5	46
	0951	7.8	238		0853	7.6	232
	1605	1.6	49		1458	1.8	55
	2221	7.3	223		2114	7.1	216
4 F	0428	1.4	43	19 Sa	0316	1.5	46
	1056	7.8	238		0948	7.9	241
	1714	1.5	46		1602	1.5	46
	2324	7.2	219		2215	7.3	223
5 Sa	0530	1.4	43	20 Su	0414	1.4	43
	1154	8.0	244		1045	8.3	253
	1813	1.3	40		1701	1.1	34
					2317	7.5	229
6 Su	0023	7.4	226	21 M	0512	1.1	34
	0623	1.4	43		1140	8.8	268
	1241	8.2	250		1759	0.6	18
	1901	1.0	30				
7 M	0110	7.5	229	22 Tu	0012	8.0	244
	0708	1.3	40		0609	0.7	21
	1326	8.4	256		1235	9.3	283
	1943	0.8	24		1852	0.0	0
8 Tu	0153	7.7	235	23 W	0108	8.4	256
	0750	1.2	37		0705	0.3	9
	1406	8.6	262		1327	9.7	296
	2022	0.6	18		1946	-0.4	-12
9 W	0233	7.8	238	24 Th	0203	8.9	271
	0827	1.1	34		0758	0.0	0
	1443	9.7	265		1419	10.1	308
	2057	0.4	12		2038	-0.8	-24
10 Th	0310	8.0	244	25 F	0254	9.2	280
	0903	1.1	34		0851	-0.2	-6
	1518	8.7	265		1511	10.2	311
	2133	0.3	9		2128	-1.0	-30
11 F	0349	8.0	244	26 Sa	0347	9.4	287
	0939	1.1	34		0945	-0.2	-6
	1555	8.7	265		1603	10.1	308
	2209	0.3	9		2219	-0.9	-27
12 Sa	0427	8.0	244	27 Su	0439	9.4	287
	1017	1.2	37		1039	-0.1	-3
	1631	8.5	259		1656	9.8	299
	2246	0.4	12		2310	-0.7	-21
13 Su	0505	7.9	241	28 M	0532	9.3	283
	1054	1.3	40		1134	0.2	6
	1710	8.3	253		1750	9.4	287
	2323	0.6	18				
14 M	0545	7.7	235	29 Tu	0003	-0.3	-9
	1134	1.5	46		0626	9.1	277
	1750	8.0	244		1230	0.6	18
					1846	8.8	268
15 Tu	0003	0.9	27	30 W	0056	0.2	6
	0627	7.6	232		0723	8.8	268
	1220	1.7	52		1330	1.0	30
	1834	7.7	235		1943	8.2	250
				31 Th	0152	0.7	21
					0821	8.5	259
					1431	1.4	43
					2044	7.7	235

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0249	1.2	37	16 Sa	0149	1.1	34
	0917	8.3	253		0818	8.4	256
	1535	1.6	49		1429	1.4	43
	2145	7.4	226		2042	7.6	232
2 Sa	0349	1.5	46	17 Su	0239	1.2	37
	1017	8.1	247		0910	8.5	259
	1636	1.7	52		1526	1.3	40
	2245	7.2	219		2139	7.5	229
3 Su	0445	1.8	55	18 M	0335	1.3	40
	1112	8.1	247		1006	8.7	265
	1734	1.6	49		1625	1.1	34
	2343	7.1	216		2242	7.6	232
4 M	0538	1.9	58	19 Tu	0437	1.2	37
	1202	8.1	247		1106	8.9	271
	1825	1.5	46		1727	0.8	24
					2343	7.8	238
5 Tu	0036	7.2	219	20 W	0538	1.1	34
	0628	2.0	61		1207	9.2	280
	1249	8.2	250		1828	0.4	12
	1910	1.3	40				
6 W	0124	7.3	223	21 Th	0044	8.2	250
	0713	1.9	58		0641	0.9	27
	1332	8.3	253		1305	9.5	290
	1953	1.1	34		1926	0.1	3
7 Th	0206	7.5	229	22 F	0144	8.6	262
	0756	1.8	55		0740	0.5	18
	1411	8.4	256		1403	9.8	299
	2031	0.9	27		2022	-0.3	-9
8 F	0248	7.7	235	23 Sa	0240	9.1	277
	0838	1.7	52		0839	0.3	9
	1454	8.6	262		1457	9.9	302
	2110	0.7	21		2115	-0.5	-15
9 Sa	0327	7.9	241	24 Su	0334	9.4	287
	0918	1.6	49		0933	0.2	6
	1533	8.6	262		1551	9.9	302
	2147	0.6	18		2205	-0.6	-18
10 Su	0408	8.1	247	25 M	0427	9.6	293
	0957	1.5	46		1028	0.2	6
	1612	8.6	262		1641	9.7	296
	2225	0.5	15		2255	-0.5	-15
11 M	0447	8.2	250	26 Tu	0516	9.6	293
	1039	1.4	43		1121	0.3	9
	1651	8.5	259		1733	9.4	287
	2304	0.6	18		2344	-0.3	-9
12 Tu	0524	8.2	250	27 W	0608	9.5	290
	1120	1.4	43		1214	0.5	15
	1732	8.3	253		1824	9.0	274
	2342	0.7	21				
13 W	0605	8.3	253	28 Th	0032	0.2	6
	1201	1.4	43		0656	9.2	280
	1814	8.1	247		1304	0.9	27
					1915	8.4	256
14 Th	0021	0.8	24	29 F	0119	0.7	21
	0646	8.3	253		0747	8.9	271
	1246	1.4	43		1357	1.3	40
	1859	7.9	241		2008	7.9	241
15 F	0104	1.0	30	30 Sa	0208	1.2	37
	0730	8.4	256		0838	8.5	259
	1336	1.4	43		1452	1.6	49
	1947	7.7	235		2101	7.4	226

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTARENAS, COSTA RICA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0300	1.7	52	16 M	0208	1.0	30
	0929	8.2	250		0837	8.9	271
	1546	1.9	58		1455	1.1	34
	2200	7.0	213		2109	7.6	232
2 M	0352	2.1	64	17 Tu	0305	1.3	40
	1024	7.9	241		0937	8.8	268
	1645	2.0	61		1558	1.2	37
	2301	6.8	207		2213	7.5	229
3 Tu	0447	2.4	73	18 W	0409	1.5	46
	1119	7.8	238		1041	8.7	265
	1743	2.0	61		1703	1.1	34
	2357	6.8	207		2322	7.6	232
4 W	0546	2.5	76	19 Th	0519	1.5	46
	1210	7.8	238		1148	8.8	268
	1836	1.8	55		1810	0.9	27
5 Th	0052	7.0	213	20 F	0031	8.0	244
	0639	2.5	76		0628	1.3	40
	1300	8.0	244		1252	9.0	274
	1925	1.5	46		1913	0.5	15
6 F	0142	7.3	223	21 Sa	0134	8.5	259
	0729	2.3	70		0732	1.0	30
	1348	8.2	250		1353	9.3	283
	2006	1.2	37		2011	0.1	3
7 Sa	0225	7.6	232	22 Su	0230	9.0	274
	0815	2.0	61		0830	0.6	18
	1430	8.4	256		1446	9.6	293
	2048	0.9	27		2102	-0.2	-6
8 Su	0307	8.0	244	23 M	0321	9.4	287
	0859	1.7	52		0925	0.3	9
	1513	8.6	262		1537	9.7	296
	2126	0.7	21		2149	-0.4	-12
9 M	0347	8.3	253	24 Tu	0409	9.7	296
	0940	1.4	43		1015	0.1	3
	1553	8.8	268		1625	9.6	293
	2204	0.5	15		2236	-0.4	-12
10 Tu	0423	8.6	262	25 W	0454	9.8	299
	1021	1.1	34		1102	0.2	6
	1631	8.8	268		1713	9.4	287
	2240	0.4	12		2318	-0.2	-6
11 W	0500	8.8	268	26 Th	0540	9.7	296
	1100	0.9	27		1145	0.4	12
	1713	8.8	268		1757	9.0	274
	2316	0.4	12				
12 Th	0539	9.0	274	27 F	0001	0.2	6
	1141	0.8	24		0622	9.4	287
	1751	8.6	262		1230	0.7	21
	2355	0.4	12		1840	8.5	259
13 F	0617	9.1	277	28 Sa	0043	0.7	21
	1224	0.8	24		0707	9.0	274
	1835	8.4	256		1317	1.1	34
					1928	7.9	241
14 Sa	0035	0.6	18	29 Su	0125	1.3	40
	0659	9.1	277		0752	8.5	259
	1309	0.9	27		1405	1.6	49
	1919	8.2	250		2016	7.3	223
15 Su	0120	0.8	24	30 M	0210	1.8	55
	0746	9.0	274		0840	8.0	244
	1400	1.0	30		1457	2.0	61
	2010	7.9	241		2111	6.9	210
				31 Tu	0259	2.4	73
					0935	7.6	232
					1554	2.2	67
					2213	6.6	201

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0358	2.7	82	16 Th	0353	1.7	52
	1031	7.4	226		1027	8.2	250
	1658	2.3	70		1650	1.4	43
	2319	6.5	198		2312	7.5	229
2 Th	0504	2.8	85	17 F	0512	1.7	52
	1133	7.4	226		1140	8.3	253
	1759	2.1	64		1802	1.1	34
3 F	0020	6.7	204	18 Sa	0023	7.9	241
	0610	2.7	82		0625	1.5	46
	1231	7.6	232		1247	8.5	259
	1855	1.8	55		1905	0.7	21
4 Sa	0113	7.1	216	19 Su	0126	8.4	256
	0705	2.4	73		0729	1.0	30
	1321	7.9	241		1345	8.9	271
	1942	1.4	43		1958	0.3	9
5 Su	0201	7.6	232	20 M	0219	9.0	274
	0755	1.9	58		0823	0.5	15
	1406	8.3	253		1435	9.2	280
	2022	0.9	27		2047	-0.1	-3
6 M	0240	8.2	250	21 Tu	0304	9.4	287
	0838	1.4	43		0911	0.2	6
	1451	8.7	265		1523	9.4	287
	2059	0.5	15		2129	-0.3	-9
7 Tu	0319	8.7	265	22 W	0347	9.7	296
	0916	0.9	27		0955	0.0	0
	1529	8.9	271		1605	9.4	287
	2136	0.2	6		2211	-0.3	-9
8 W	0356	9.1	277	23 Th	0429	9.8	299
	0956	0.5	15		1036	0.0	0
	1608	9.1	277		1647	9.2	280
	2214	0.0	0		2249	-0.1	-3
9 Th	0431	9.5	290	24 F	0508	9.6	293
	1036	0.2	6		1115	0.2	6
	1647	9.1	277		1726	8.8	268
	2249	-0.1	-3		2326	0.3	9
10 F	0510	9.6	293	25 Sa	0547	9.3	283
	1116	0.1	3		1155	0.5	15
	1726	9.0	274		1806	8.3	253
	2328	0.0	0				
11 Sa	0547	9.7	296	26 Su	0003	0.8	24
	1158	0.1	3		0627	8.8	268
	1809	8.8	268		1235	1.0	30
					1848	7.8	238
12 Su	0009	0.2	6	27 M	0043	1.3	40
	0632	9.5	290		0707	8.3	253
	1243	0.4	12		1319	1.4	43
	1854	8.4	256		1933	7.2	219
13 M	0054	0.5	15	28 Tu	0125	1.9	58
	0719	9.2	280		0752	7.7	235
	1333	0.7	21		1408	1.9	58
	1946	8.0	244		2026	6.7	204
14 Tu	0144	1.0	30	29 W	0213	2.4	73
	0813	8.8	268		0845	7.3	223
	1431	1.0	30		1503	2.2	67
	2047	7.6	232		2129	6.4	195
15 W	0244	1.4	43	30 Th	0314	2.8	85
	0916	8.5	259		0948	7.0	213
	1537	1.3	40		1611	2.4	73
	2158	7.4	226		2242	6.4	195
				31 F	0428	2.9	88
					1058	7.0	213
					1719	2.3	70
					2346	6.6	201

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0538	2.7	82	16 Su	0015	8.0	244
	1159	7.2	219		0623	1.4	43
	1818	1.9	58		1239	8.2	250
					1852	0.9	27
2 Su	0041	7.1	216	17 M	0110	8.5	259
	0636	2.2	67		0721	0.9	27
	1255	7.7	235		1332	8.5	259
	1905	1.4	43		1942	0.5	15
3 M	0126	7.8	238	18 Tu	0159	9.0	274
	0726	1.5	46		0809	0.4	12
	1340	8.2	250		1419	8.8	268
	1949	0.9	27		2027	0.2	6
4 Tu	0206	8.4	256	19 W	0241	9.3	283
	0809	0.9	27		0854	0.1	3
	1422	8.6	262		1502	9.0	274
	2027	0.4	12		2104	0.0	0
5 W	0245	9.1	277	20 Th	0322	9.5	290
	0849	0.3	9		0932	-0.1	-3
	1503	9.0	274		1541	9.0	274
	2104	0.0	0		2141	0.1	3
6 Th	0322	9.6	293	21 F	0359	9.5	290
	0929	-0.2	-6		1009	0.0	0
	1541	9.3	283		1620	8.8	268
	2142	-0.3	-9		2218	0.2	6
7 F	0400	9.9	302	22 Sa	0435	9.4	287
	1009	-0.5	-15		1044	0.1	3
	1621	9.4	287		1657	8.6	262
	2222	-0.4	-12		2253	0.5	15
8 Sa	0440	10.1	308	23 Su	0512	9.1	277
	1050	-0.6	-18		1121	0.4	12
	1702	9.3	283		1734	8.2	250
	2302	-0.4	-12		2329	1.0	30
9 Su	0522	10.0	305	24 M	0547	8.6	262
	1133	-0.4	-12		1158	0.8	24
	1745	9.0	274		1814	7.7	235
	2345	-0.1	-3				
10 M	0606	9.7	296	25 Tu	0006	1.5	46
	1221	-0.1	-3		0627	8.1	247
	1835	8.6	262		1240	1.3	40
					1859	7.2	219
11 Tu	0032	0.4	12	26 W	0048	2.0	61
	0656	9.2	280		0711	7.6	232
	1312	0.4	12		1325	1.7	52
	1928	8.0	244		1949	6.8	207
12 W	0128	1.0	30	27 Th	0138	2.4	73
	0754	8.6	262		0802	7.1	216
	1413	1.0	30		1421	2.1	64
	2034	7.6	232		2050	6.5	198
13 Th	0234	1.5	46	28 F	0239	2.8	85
	0903	8.1	247		0909	6.8	207
	1522	1.4	43		1524	2.3	70
	2149	7.4	226		2158	6.5	198
14 F	0351	1.8	55	29 Sa	0351	2.8	85
	1020	7.8	238		1019	6.8	207
	1640	1.4	43		1633	2.2	67
	2306	7.5	229		2304	6.8	207
15 Sa	0512	1.8	55	30 Su	0503	2.5	76
	1135	7.9	241		1125	7.0	213
	1751	1.2	37		1733	1.9	58
					2359	7.3	223

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0602	1.9	58	16	0049	8.6	262
M	1220	7.5	229	Tu	0705	0.9	27
	1824	1.4	43		1313	8.1	247
					1918	0.8	24
2	0045	8.0	244	17	0134	8.9	271
Tu	0652	1.2	37	W	0750	0.5	15
	1306	8.0	244		1358	8.4	256
	1908	0.9	27		2001	0.7	21
3	0129	8.7	265	18	0216	9.1	277
W	0737	0.5	15	Th	0830	0.3	9
	1350	8.6	262		1440	8.5	259
	1950	0.3	9		2038	0.6	18
4	0209	9.4	287	19	0253	9.2	280
Th	0819	-0.2	-6	F	0907	0.1	3
	1430	9.0	274		1518	8.5	259
	2030	-0.1	-3		2115	0.6	18
5	0248	9.9	302	20	0329	9.2	280
F	0901	-0.7	-21	Sa	0943	0.1	3
	1515	9.3	283		1555	8.5	259
	2112	-0.5	-15		2148	0.7	21
6	0330	10.3	314	21	0405	9.1	277
Sa	0943	-0.9	-27	Su	1016	0.2	6
	1557	9.5	290		1632	8.3	253
	2155	-0.6	-18		2224	0.9	27
7	0413	10.3	314	22	0439	8.8	268
Su	1027	-1.0	-30	M	1052	0.4	12
	1641	9.4	287		1709	8.0	244
	2239	-0.4	-12		2302	1.2	37
8	0459	10.1	308	23	0518	8.5	259
M	1113	-0.7	-21	Tu	1129	0.7	21
	1729	9.1	277		1749	7.7	235
	2328	-0.1	-3		2341	1.6	49
9	0547	9.7	296	24	0557	8.0	244
Tu	1201	-0.3	-9	W	1209	1.1	34
	1821	8.7	265		1832	7.4	226
10	0019	0.4	12	25	0022	2.0	61
W	0640	9.1	277	Th	0640	7.6	232
	1256	0.3	9		1254	1.5	46
	1919	8.2	250		1920	7.1	216
11	0120	1.0	30	26	0112	2.3	70
Th	0743	8.4	256	F	0730	7.2	219
	1357	0.8	24		1344	1.9	58
	2026	7.9	241		2013	6.9	210
12	0229	1.5	46	27	0210	2.5	76
F	0853	7.9	241	Sa	0829	6.9	210
	1509	1.3	40		1440	2.1	64
	2139	7.7	235		2114	6.9	210
13	0347	1.7	52	28	0314	2.5	76
Sa	1009	7.6	232	Su	0936	6.8	207
	1623	1.4	43		1540	2.1	64
	2251	7.8	238		2213	7.2	219
14	0506	1.6	49	29	0420	2.2	67
Su	1120	7.6	232	M	1040	7.0	213
	1732	1.3	40		1640	1.9	58
	2356	8.2	250		2309	7.7	235
15	0612	1.3	40	30	0519	1.7	52
M	1223	7.9	241	Tu	1136	7.3	223
	1828	1.1	34		1735	1.5	46
					2359	8.3	253
				31	0613	1.0	30
				W	1228	7.8	238
					1825	1.0	30

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0047	9.0	274	16	0146	8.8	268
Th	0701	0.3	9	F	0805	0.7	21
	1316	8.4	256		1417	8.0	244
	1913	0.5	15		2011	1.3	40
2	0134	9.6	293	17	0227	8.9	271
F	0750	-0.3	-9	Sa	0842	0.5	15
	1403	8.9	271		1456	8.1	247
	1958	0.0	0		2048	1.2	37
3	0219	10.1	308	18	0303	8.9	271
Sa	0833	-0.8	-24	Su	0919	0.4	12
	1448	9.3	283		1536	8.2	250
	2046	-0.3	-9		2125	1.2	37
4	0304	10.4	317	19	0341	8.8	268
Su	0920	-1.0	-30	M	0955	0.4	12
	1536	9.5	290		1612	8.1	247
	2133	-0.4	-12		2203	1.3	40
5	0352	10.4	317	20	0417	8.7	265
M	1006	-1.1	-34	Tu	1031	0.5	15
	1624	9.5	290		1650	8.1	247
	2223	-0.3	-9		2241	1.4	43
6	0441	10.2	311	21	0455	8.5	259
Tu	1057	-0.8	-24	W	1108	0.7	21
	1716	9.3	283		1729	7.9	241
	2315	0.0	0		2321	1.6	49
7	0533	9.7	296	22	0534	8.2	250
W	1147	-0.4	-12	Th	1147	0.9	27
	1809	9.0	274		1811	7.8	238
8	0011	0.4	12	23	0005	1.8	55
Th	0630	9.1	277	F	0617	7.8	238
	1243	0.1	3		1228	1.2	37
	1907	8.7	265		1854	7.6	232
9	0112	0.9	27	24	0051	2.0	61
F	0731	8.5	259	Sa	0703	7.5	229
	1344	0.6	18		1312	1.5	46
	2013	8.4	256		1939	7.6	232
10	0218	1.4	43	25	0139	2.1	64
Sa	0836	7.9	241	Su	0752	7.2	219
	1447	1.1	34		1359	1.7	52
	2117	8.2	250		2031	7.6	232
11	0332	1.6	49	26	0237	2.0	61
Su	0946	7.6	232	M	0849	7.1	216
	1554	1.4	43		1451	1.8	55
	2225	8.2	250		2124	7.8	238
12	0444	1.6	49	27	0335	1.9	58
M	1055	7.5	229	Tu	0950	7.1	216
	1700	1.5	46		1547	1.7	52
	2325	8.3	253		2220	8.1	247
13	0546	1.4	43	28	0434	1.5	46
Tu	1156	7.5	229	W	1050	7.3	223
	1759	1.5	46		1645	1.5	46
					2315	8.5	259
14	0019	8.5	259	29	0533	1.0	30
W	0641	1.1	34	Th	1148	7.7	235
	1249	7.7	235		1743	1.2	37
	1846	1.4	43				
15	0105	8.6	262	30	0010	9.0	274
Th	0726	0.9	27	F	0629	0.5	15
	1335	7.9	241		1244	8.1	247
	1932	1.3	40		1839	0.8	24

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0102	9.5	290	16	0201	8.4	256
Sa	0721	-0.1	-3	Su	0822	0.9	27
	1337	8.6	262		1438	7.7	235
	1932	0.4	12		2028	1.7	52
2	0153	9.9	302	17	0240	8.5	259
Su	0811	-0.5	-15	M	0900	0.7	21
	1430	9.1	277		1517	7.9	241
	2025	0.0	0		2107	1.6	49
3	0246	10.2	311	18	0321	8.6	262
M	0902	-0.8	-24	Tu	0937	0.5	15
	1521	9.4	287		1556	8.1	247
	2118	-0.2	-6		2147	1.4	43
4	0336	10.2	311	19	0359	8.6	262
Tu	0953	-1.0	-30	W	1013	0.5	15
	1612	9.6	293		1634	8.3	253
	2212	-0.2	-6		2227	1.4	43
5	0428	10.1	308	20	0438	8.6	262
W	1043	-0.9	-27	Th	1050	0.5	15
	1704	9.6	293		1710	8.3	253
	2305	0.0	0		2305	1.3	40
6	0521	9.7	296	21	0517	8.4	256
Th	1134	-0.6	-18	F	1124	0.6	18
	1757	9.5	290		1748	8.3	253
					2345	1.3	40
7	0001	0.3	9	22	0555	8.2	250
F	0616	9.2	280	Sa	1203	0.7	21
	1227	-0.2	-6		1827	8.3	253
	1852	9.2	280				
8	0059	0.7	21	23	0027	1.4	43
Sa	0712	8.6	262	Su	0638	7.9	241
	1322	0.4	12		1240	0.9	27
	1949	8.9	271		1907	8.3	253
9	0157	1.1	34	24	0112	1.4	43
Su	0811	8.1	247	M	0722	7.7	235
	1416	0.9	27		1323	1.1	34
	2047	8.6	262		1951	8.3	253
10	0302	1.4	43	25	0200	1.5	46
M	0914	7.6	232	Tu	0810	7.4	226
	1516	1.4	43		1409	1.3	40
	2148	8.3	253		2039	8.3	253
11	0406	1.6	49	26	0254	1.5	46
Tu	1016	7.3	223	W	0906	7.3	223
	1616	1.7	52		1501	1.4	43
	2246	8.2	250		2134	8.4	256
12	0509	1.6	49	27	0355	1.4	43
W	1120	7.1	216	Th	1007	7.2	219
	1716	2.0	61		1601	1.5	46
	2343	8.1	247		2234	8.5	259
13	0607	1.5	46	28	0456	1.1	34
Th	1216	7.1	216	F	1113	7.4	226
	1812	2.0	61		1706	1.4	43
					2337	8.8	268
14	0033	8.2	250	29	0600	0.8	24
F	0657	1.4	43	Sa	1218	7.8	238
	1308	7.3	223		1810	1.1	34
	1900	2.0	61				
15	0117	8.3	253	30	0037	9.1	277
Sa	0740	1.1	34	Su	0700	0.3	9
	1355	7.5	229		1318	8.3	253
	1945	1.9	58		1913	0.7	21
				31	0137	9.5	290
				M	0756	-0.2	-6
					1414	8.8	268
					2014	0.3	9

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

LA UNION, EL SALVADOR, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0544	9.5	290	16	0010	0.5	15
M	1138	0.0	0	Tu	0629	9.1	277
	1814	9.5	290		1221	0.4	12
					1901	9.4	287
2	0005	0.5	15	17	0052	0.9	27
Tu	0626	9.3	283	W	0706	8.6	262
	1219	0.1	3		1300	0.9	27
	1856	9.6	293		1938	9.1	277
3	0051	0.6	18	18	0133	1.4	43
W	0711	9.0	274	Th	0746	8.1	247
	1303	0.3	9		1339	1.4	43
	1943	9.6	293		2015	8.7	265
4	0140	0.7	21	19	0218	1.8	55
Th	0759	8.6	262	F	0828	7.6	232
	1351	0.6	18		1420	2.0	61
	2033	9.6	293		2059	8.4	256
5	0236	0.9	27	20	0308	2.2	67
F	0852	8.3	253	Sa	0916	7.1	216
	1447	0.9	27		1506	2.5	76
	2129	9.5	290		2146	8.1	247
6	0337	1.0	30	21	0403	2.4	73
Sa	0952	8.0	244	Su	1011	6.8	207
	1547	1.2	37		1606	2.8	85
	2229	9.4	287		2242	8.0	244
7	0443	1.1	34	22	0508	2.4	73
Su	1100	7.9	241	M	1116	6.7	204
	1655	1.4	43		1712	2.9	88
	2334	9.4	287		2343	8.0	244
8	0550	0.9	27	23	0611	2.2	67
M	1214	8.0	244	Tu	1225	6.9	210
	1804	1.3	40		1819	2.8	85
9	0041	9.6	293	24	0043	8.2	250
Tu	0654	0.6	18	W	0704	1.8	55
	1326	8.3	253		1328	7.3	223
	1912	1.1	34		1918	2.4	73
10	0147	9.8	299	25	0141	8.6	262
W	0752	0.2	6	Th	0755	1.3	40
	1429	8.8	268		1424	7.9	241
	2013	0.7	21		2009	1.8	55
11	0245	10.0	305	26	0232	9.0	274
Th	0846	-0.2	-6	F	0837	0.8	24
	1527	9.3	283		1509	8.5	259
	2106	0.4	12		2054	1.2	37
12	0338	10.1	308	27	0319	9.3	283
F	0935	-0.4	-12	Sa	0917	0.3	9
	1616	9.7	296		1554	9.1	277
	2157	0.2	6		2138	0.6	18
13	0426	10.1	308	28	0403	9.6	293
Sa	1019	-0.5	-15	Su	0956	-0.1	-3
	1700	9.9	302		1634	9.6	293
	2243	0.1	3		2220	0.2	6
14	0509	9.9	302	29	0445	9.8	299
Su	1101	-0.4	-12	M	1036	-0.4	-12
	1742	9.9	302		1713	10.0	305
	2328	0.3	9		2303	-0.2	-6
15	0551	9.6	293	30	0526	9.8	299
M	1143	-0.1	-3	Tu	1117	-0.6	-18
	1821	9.7	296		1754	10.3	314
					2347	-0.3	-9
				31	0608	9.6	293
				W	1158	-0.5	-15
					1837	10.3	314

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0032	-0.2	-6	16	0057	1.0	30
Th	0652	9.2	280	F	0706	8.1	247
	1242	-0.2	-6		1300	1.3	40
	1921	10.2	311		1933	8.9	271
2	0121	0.1	3	17	0135	1.4	43
F	0738	8.8	268	Sa	0746	7.6	232
	1330	0.2	6		1338	1.8	55
	2010	9.9	302		2012	8.5	259
3	0212	0.5	15	18	0218	1.9	58
Sa	0831	8.3	253	Su	0831	7.2	219
	1423	0.8	24		1423	2.3	70
	2105	9.5	290		2100	8.1	247
4	0312	0.9	27	19	0310	2.2	67
Su	0932	7.9	241	M	0924	6.8	207
	1524	1.3	40		1515	2.7	82
	2207	9.1	277		2156	7.8	238
5	0419	1.2	37	20	0410	2.4	73
M	1043	7.6	232	Tu	1031	6.6	201
	1636	1.7	52		1624	2.9	88
	2319	8.9	271		2258	7.7	235
6	0530	1.3	40	21	0519	2.3	70
Tu	1206	7.7	235	W	1142	6.8	207
	1753	1.7	52		1738	2.8	85
7	0031	8.9	271	22	0006	7.9	241
W	0639	1.1	34	Th	0622	2.0	61
	1320	8.0	244		1252	7.3	223
	1904	1.4	43		1847	2.3	70
8	0139	9.1	277	23	0107	8.3	253
Th	0741	0.7	21	F	0718	1.4	43
	1424	8.6	262		1349	8.0	244
	2005	1.0	30		1941	1.6	49
9	0237	9.3	283	24	0203	8.8	268
F	0832	0.3	9	Sa	0806	0.7	21
	1517	9.1	277		1440	8.8	268
	2057	0.6	18		2029	0.8	24
10	0325	9.5	290	25	0253	9.3	283
Sa	0918	0.0	0	Su	0848	0.1	3
	1559	9.6	293		1525	9.6	293
	2143	0.2	6		2115	0.0	0
11	0408	9.6	293	26	0338	9.7	296
Su	0959	-0.2	-6	M	0930	-0.5	-15
	1639	9.8	299		1606	10.2	311
	2225	0.1	3		2159	-0.5	-15
12	0446	9.5	290	27	0421	9.9	302
M	1036	-0.2	-6	Tu	1012	-0.8	-24
	1713	9.9	302		1648	10.7	326
	2304	0.1	3		2243	-0.9	-27
13	0522	9.3	283	28	0504	9.9	302
Tu	1113	0.0	0	W	1055	-1.0	-30
	1749	9.8	299		1730	10.8	329
	2341	0.3	9		2328	-1.0	-30
14	0557	9.0	274				
W	1149	0.3	9				
	1822	9.5	290				
15	0018	0.6	18				
Th	0631	8.6	262				
	1224	0.7	21				
	1855	9.2	280				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0548	9.8	299	16	0600	8.5	259
Th	1138	-0.8	-24	F	1151	0.8	24
	1815	10.8	329		1820	9.2	280
2	0013	-0.8	-24	17	0021	0.8	24
F	0634	9.4	287	Sa	0634	8.1	247
	1224	-0.5	-15		1226	1.3	40
	1901	10.4	317		1855	8.9	271
3	0101	-0.3	-9	18	0058	1.2	37
Sa	0722	8.9	271	Su	0714	7.6	232
	1314	0.1	3		1303	1.7	52
	1951	9.9	302		1935	8.5	259
4	0154	0.3	9	19	0140	1.6	49
Su	0818	8.3	253	M	0754	7.2	219
	1407	0.8	24		1348	2.2	67
	2047	9.3	283		2023	8.1	247
5	0252	0.9	27	20	0228	1.9	58
M	0921	7.8	238	Tu	0852	7.0	213
	1510	1.5	46		1439	2.6	79
	2153	8.7	265		2117	7.8	238
6	0358	1.3	40	21	0326	2.2	67
Tu	1037	7.5	229	W	0955	6.9	210
	1624	1.9	58		1545	2.7	82
	2305	8.4	256		2221	7.7	235
7	0513	1.5	46	22	0429	2.2	67
W	1158	7.6	232	Th	1103	7.1	216
	1746	1.9	58		1701	2.6	79
					2326	7.8	238
8	0020	8.3	253	23	0536	1.9	58
Th	0625	1.4	43	F	1211	7.6	232
	1312	8.1	247		1811	2.0	61
	1857	1.6	49				
9	0126	8.5	259	24	0031	8.1	247
F	0723	1.0	30	Sa	0636	1.3	40
	1409	8.6	262		1310	8.4	256
	1953	1.1	34		1910	1.2	37
10	0221	8.8	268	25	0128	8.6	262
Sa	0813	0.6	18	Su	0728	0.6	18
	1456	9.1	277		1403	9.2	280
	2042	0.7	21		2003	0.4	12
11	0306	9.0	274	26	0221	9.2	280
Su	0856	0.3	9	M	0816	0.0	0
	1535	9.4	287		1450	10.1	308
	2122	0.3	9		2050	-0.4	-12
12	0344	9.1	277	27	0309	9.6	293
M	0934	0.2	6	Tu	0901	-0.6	-18
	1611	9.7	296		1536	10.7	326
	2200	0.1	3		2136	-1.0	-30
13	0420	9.1	277	28	0356	9.9	302
Tu	1010	0.1	3	W	0947	-1.0	-30
	1643	9.8	299		1621	11.1	338
	2236	0.1	3		2222	-1.3	-40
14	0453	9.0	274	29	0443	9.9	302
W	1043	0.2	6	Th	1033	-1.1	-34
	1715	9.7	296		1707	11.2	341
	2311	0.2	6		2307	-1.3	-40
15	0525	8.8	268	30	0531	9.8	299
Th	1119	0.5	15	F	1119	-0.9	-27
	1747	9.5	290		1755	11.0	335
	2346	0.4	12		2355	-1.0	-30
				31	0618	9.4	287
				Sa	1207	-0.4	-12
					1844	10.5	320

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Su	0044	-0.5	-15	16 M	0029	1.0	30
	0711	9.0	274		0652	7.7	235
	1258	0.2	6		1237	1.8	55
	1935	9.8	299		1909	8.6	262
2 M	0135	0.2	6	17 Tu	0110	1.3	40
	0810	8.4	256		0738	7.5	229
	1354	1.0	30		1323	2.1	64
	2033	9.1	277		1954	8.2	250
3 Tu	0233	0.8	24	18 W	0156	1.6	49
	0913	8.0	244		0828	7.4	226
	1459	1.6	49		1415	2.3	70
	2140	8.5	259		2047	7.9	241
4 W	0340	1.4	43	19 Th	0247	1.8	55
	1030	7.8	238		0926	7.4	226
	1617	2.0	61		1519	2.4	73
	2249	8.1	247		2147	7.8	238
5 Th	0453	1.6	49	20 F	0348	1.9	58
	1145	7.9	241		1029	7.7	235
	1734	2.0	61		1629	2.2	67
					2249	7.9	241
6 F	0001	8.0	244	21 Sa	0452	1.6	49
	0600	1.6	49		1130	8.3	253
	1249	8.2	250		1735	1.7	52
	1841	1.7	52		2353	8.1	247
7 Sa	0103	8.1	247	22 Su	0553	1.2	37
	0659	1.4	43		1230	9.0	274
	1342	8.6	262		1836	1.0	30
	1934	1.3	40				
8 Su	0155	8.2	250	23 M	0052	8.6	262
	0745	1.1	34		0651	0.6	18
	1426	9.0	274		1326	9.7	296
	2019	0.9	27		1931	0.2	6
9 M	0240	8.4	256	24 Tu	0149	9.0	274
	0827	0.8	24		0744	0.0	0
	1503	9.3	283		1416	10.4	317
	2058	0.6	18		2024	-0.5	-15
10 Tu	0317	8.6	262	25 W	0242	9.4	287
	0905	0.7	21		0834	-0.5	-15
	1537	9.5	290		1507	11.0	335
	2135	0.3	9		2114	-1.1	-34
11 W	0351	8.6	262	26 Th	0333	9.7	296
	0940	0.6	18		0924	-0.8	-24
	1609	9.6	293		1557	11.3	344
	2209	0.3	9		2200	-1.3	-40
12 Th	0423	8.6	262	27 F	0425	9.9	302
	1015	0.7	21		1013	-0.8	-24
	1641	9.6	293		1647	11.2	341
	2243	0.3	9		2249	-1.3	-40
13 F	0459	8.5	259	28 Sa	0515	9.8	299
	1048	0.8	24		1102	-0.6	-18
	1715	9.5	290		1738	11.0	335
	2318	0.4	12		2338	-1.0	-30
14 Sa	0533	8.3	253	29 Su	0608	9.5	290
	1122	1.1	34		1154	-0.2	-6
	1749	9.2	280		1829	10.4	317
	2354	0.7	21				
15 Su	0610	8.0	244	30 M	0026	-0.5	-15
	1159	1.4	43		0703	9.2	280
	1826	8.9	271		1247	0.4	12
					1922	9.8	299

MAY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Tu	0119	0.2	6	16 W	0045	1.1	34
	0802	8.8	268		0717	8.0	244
	1343	1.1	34		1303	1.9	58
	2020	9.1	277		1933	8.5	259
2 W	0215	0.8	24	17 Th	0130	1.3	40
	0905	8.5	259		0806	8.1	247
	1447	1.7	52		1354	2.0	61
	2120	8.5	259		2020	8.2	250
3 Th	0316	1.4	43	18 F	0218	1.4	43
	1009	8.3	253		0900	8.2	250
	1559	2.0	61		1451	2.0	61
	2225	8.0	244		2116	8.1	247
4 F	0422	1.7	52	19 Sa	0313	1.5	46
	1112	8.3	253		0955	8.5	259
	1712	2.1	64		1557	1.8	55
	2329	7.8	238		2213	8.1	247
5 Sa	0525	1.8	55	20 Su	0413	1.4	43
	1212	8.4	256		1055	9.0	274
	1811	1.9	58		1701	1.5	46
					2315	8.2	250
6 Su	0025	7.7	235	21 M	0514	1.1	34
	0623	1.8	55		1153	9.5	290
	1302	8.6	262		1804	0.9	27
	1903	1.6	49				
7 M	0120	7.8	238	22 Tu	0017	8.5	259
	0712	1.6	49		0615	0.7	21
	1347	8.9	271		1251	10.1	308
	1949	1.3	40		1904	0.3	9
8 Tu	0203	7.9	241	23 W	0118	8.8	268
	0752	1.5	46		0714	0.3	9
	1426	9.1	277		1349	10.6	323
	2029	1.0	30		1957	-0.3	-9
9 W	0243	8.1	247	24 Th	0216	9.2	280
	0832	1.3	40		0810	-0.1	-3
	1501	9.3	283		1442	11.0	335
	2106	0.8	24		2050	-0.8	-24
10 Th	0322	8.2	250	25 F	0314	9.5	290
	0911	1.2	37		0904	-0.4	-12
	1535	9.5	290		1538	11.2	341
	2143	0.6	18		2142	-1.0	-30
11 F	0359	8.3	253	26 Sa	0410	9.7	296
	0946	1.2	37		0956	-0.4	-12
	1612	9.5	290		1630	11.1	338
	2218	0.6	18		2231	-1.0	-30
12 Sa	0438	8.3	253	27 Su	0504	9.8	299
	1023	1.3	40		1048	-0.3	-9
	1648	9.4	287		1723	10.9	332
	2254	0.6	18		2320	-0.8	-24
13 Su	0515	8.2	250	28 M	0559	9.7	296
	1059	1.4	43		1141	0.1	3
	1726	9.3	283		1813	10.4	317
	2328	0.7	21				
14 M	0555	8.1	247	29 Tu	0009	-0.4	-12
	1139	1.6	49		0652	9.5	290
	1805	9.0	274		1234	0.6	18
					1906	9.8	299
15 Tu	0006	0.9	27	30 W	0101	0.2	6
	0636	8.1	247		0746	9.3	283
	1218	1.8	55		1330	1.1	34
	1847	8.8	268		1959	9.2	280
				31 Th	0151	0.8	24
					0841	9.0	274
					1427	1.6	49
					2051	8.6	262

JUNE

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 F	0246	1.3	40	16 Sa	0151	1.0	30
	0937	8.7	265		0831	9.0	274
	1528	2.0	61		1429	1.6	49
	2145	8.0	244		2047	8.4	256
2 Sa	0341	1.8	55	17 Su	0243	1.1	34
	1031	8.6	262		0924	9.2	280
	1633	2.2	67		1529	1.5	46
	2241	7.7	235		2142	8.3	253
3 Su	0441	2.1	64	18 M	0339	1.2	37
	1124	8.5	259		1021	9.5	290
	1732	2.2	67		1630	1.4	43
	2337	7.5	229		2243	8.3	253
4 M	0537	2.2	67	19 Tu	0441	1.1	34
	1214	8.6	262		1122	9.8	299
	1827	2.1	64		1735	1.1	34
					2348	8.4	256
5 Tu	0031	7.4	226	20 W	0546	1.0	30
	0630	2.2	67		1222	10.1	308
	1300	8.7	265		1838	0.6	18
	1915	1.8	55				
6 W	0123	7.5	229	21 Th	0054	8.6	262
	0718	2.1	64		0651	0.7	21
	1344	8.9	271		1326	10.4	317
	1958	1.5	46		1936	0.2	6
7 Th	0211	7.7	235	22 F	0158	9.0	274
	0800	2.0	61		0751	0.4	12
	1427	9.1	277		1426	10.7	326
	2038	1.3	40		2032	-0.3	-9
8 F	0256	7.9	241	23 Sa	0301	9.4	287
	0842	1.8	55		0848	0.1	3
	1506	9.3	283		1523	10.9	332
	2117	1.0	30		2125	-0.5	-15
9 Sa	0338	8.1	247	24 Su	0359	9.7	296
	0922	1.7	52		0943	0.0	0
	1546	9.4	287		1616	10.9	332
	2154	0.9	27		2215	-0.6	-18
10 Su	0420	8.3	253	25 M	0452	9.9	302
	1002	1.6	49		1034	0.0	0
	1628	9.5	290		1707	10.7	326
	2230	0.8	24		2302	-0.5	-15
11 M	0459	8.4	256	26 Tu	0544	10.0	305
	1041	1.5	46		1125	0.2	6
	1707	9.4	287		1757	10.4	317
	2307	0.7	21		2349	-0.2	-6
12 Tu	0539	8.5	259	27 W	0633	9.9	302
	1120	1.5	46		1216	0.6	18
	1747	9.3	283		1842	9.9	302
	2344	0.8	24				
13 W	0620	8.6	262	28 Th	0036	0.2	6
	1202	1.5	46		0721	9.7	296
	1829	9.1	277		1306	1.0	30
					1930	9.3	283
14 Th	0024	0.8	24	29 F	0121	0.7	21
	0701	8.7	265		0807	9.3	283
	1247	1.5	46		1356	1.5	46
	1911	8.9	271		2015	8.7	265
15 F	0106	0.9	27	30 Sa	0207	1.3	40
	0745	8.9	271		0853	9.0	274
	1335	1.6	49		1447	2.0	61
	1956	8.6	262		2100	8.1	247

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

LA UNION, EL SALVADOR, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0257	1.9	58	16 M	0217	0.9	27
	0940	8.7	265		0857	9.7	296
	1543	2.3	70		1500	1.3	40
	2149	7.6	232		2115	8.4	256
2 M	0349	2.3	70	17 Tu	0313	1.1	34
	1030	8.5	259		0955	9.6	293
	1642	2.5	76		1603	1.4	43
	2240	7.3	223		2217	8.2	250
3 Tu	0445	2.6	79	18 W	0417	1.3	40
	1121	8.4	256		1058	9.6	293
	1740	2.5	76		1711	1.3	40
	2340	7.2	219		2326	8.2	250
4 W	0543	2.7	82	19 Th	0526	1.4	43
	1212	8.5	259		1204	9.8	299
	1835	2.3	70		1817	1.1	34
5 Th	0041	7.2	219	20 F	0039	8.4	256
	0639	2.6	79		0635	1.2	37
	1304	8.7	265		1312	10.0	305
	1926	2.0	61		1920	0.7	21
6 F	0139	7.5	229	21 Sa	0149	8.8	268
	0731	2.4	73		0739	0.8	24
	1355	8.9	271		1413	10.2	311
	2011	1.7	52		2016	0.3	9
7 Sa	0232	7.8	238	22 Su	0252	9.3	283
	0816	2.1	64		0837	0.5	15
	1442	9.2	280		1511	10.5	320
	2053	1.3	40		2109	-0.1	-3
8 Su	0319	8.2	250	23 M	0347	9.8	299
	0901	1.8	55		0930	0.2	6
	1527	9.4	287		1603	10.6	323
	2130	1.0	30		2157	-0.3	-9
9 M	0400	8.5	259	24 Tu	0436	10.1	308
	0941	1.5	46		1019	0.1	3
	1607	9.6	293		1649	10.5	320
	2207	0.7	21		2242	-0.3	-9
10 Tu	0441	8.9	271	25 W	0522	10.2	311
	1022	1.2	37		1107	0.2	6
	1648	9.7	296		1733	10.2	311
	2243	0.6	18		2325	-0.1	-3
11 W	0518	9.1	277	26 Th	0605	10.1	308
	1102	1.0	30		1151	0.4	12
	1727	9.6	293		1813	9.8	299
	2322	0.4	12				
12 Th	0557	9.4	287	27 F	0008	0.3	9
	1144	0.9	27		0647	9.8	299
	1806	9.5	290		1234	0.9	27
					1853	9.3	283
13 F	0000	0.4	12	28 Sa	0048	0.8	24
	0637	9.5	290		0725	9.5	290
	1228	0.9	27		1319	1.4	43
	1848	9.3	283		1933	8.7	265
14 Sa	0042	0.5	15	29 Su	0128	1.3	40
	0719	9.6	293		0807	9.1	277
	1314	1.0	30		1402	1.9	58
	1933	9.0	274		2015	8.1	247
15 Su	0127	0.6	18	30 M	0210	1.9	58
	0807	9.7	296		0849	8.7	265
	1404	1.1	34		1451	2.3	70
	2020	8.7	265		2100	7.6	232
				31 Tu	0257	2.4	73
					0937	8.4	256
					1546	2.7	82
					2151	7.2	219

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0353	2.8	85	16 Th	0400	1.6	49
	1031	8.2	250		1042	9.2	280
	1649	2.8	85		1651	1.6	49
	2253	7.0	213		2317	8.0	244
2 Th	0457	3.0	91	17 F	0513	1.7	52
	1128	8.2	250		1156	9.2	280
	1753	2.7	82		1802	1.5	46
	2359	7.1	216				
3 F	0604	2.9	88	18 Sa	0035	8.3	253
	1230	8.4	256		0627	1.5	46
	1851	2.4	73		1304	9.4	287
					1907	1.1	34
4 Sa	0107	7.4	226	19 Su	0144	8.8	268
	0702	2.6	79		0731	1.0	30
	1326	8.7	265		1405	9.7	296
	1941	2.0	61		2003	0.6	18
5 Su	0205	7.8	238	20 M	0242	9.3	283
	0753	2.1	64		0827	0.6	18
	1416	9.1	277		1458	10.0	305
	2024	1.5	46		2053	0.2	6
6 M	0250	8.4	256	21 Tu	0331	9.8	299
	0837	1.6	49		0917	0.2	6
	1502	9.4	287		1545	10.1	308
	2102	1.0	30		2138	0.0	0
7 Tu	0335	8.9	271	22 W	0415	10.1	308
	0919	1.1	34		1001	0.1	3
	1544	9.7	296		1628	10.1	308
	2141	0.6	18		2218	-0.1	-3
8 W	0413	9.4	287	23 Th	0454	10.2	311
	1002	0.7	21		1043	0.1	3
	1625	9.9	302		1705	9.9	302
	2218	0.2	6		2257	0.1	3
9 Th	0453	9.8	299	24 F	0531	10.1	308
	1041	0.3	9		1123	0.3	9
	1704	9.9	302		1743	9.6	293
	2257	0.0	0		2335	0.4	12
10 F	0531	10.1	308	25 Sa	0608	9.8	299
	1123	0.2	6		1202	0.7	21
	1744	9.8	299		1816	9.1	277
	2336	0.0	0				
11 Sa	0613	10.2	311	26 Su	0012	0.8	24
	1205	0.2	6		0644	9.5	290
	1826	9.6	293		1240	1.1	34
					1853	8.6	262
12 Su	0018	0.1	3	27 M	0049	1.4	43
	0655	10.2	311		0721	9.0	274
	1253	0.4	12		1319	1.7	52
	1909	9.2	280		1933	8.1	247
13 M	0103	0.4	12	28 Tu	0130	1.9	58
	0743	10.0	305		0802	8.6	262
	1342	0.8	24		1404	2.2	67
	1959	8.8	268		2018	7.6	232
14 Tu	0155	0.8	24	29 W	0212	2.5	76
	0836	9.7	296		0849	8.2	250
	1438	1.2	37		1455	2.6	79
	2055	8.3	253		2110	7.2	219
15 W	0252	1.3	40	30 Th	0308	2.9	88
	0935	9.4	287		0945	8.0	244
	1540	1.5	46		1555	2.9	88
	2201	8.0	244		2213	7.0	213
				31 F	0413	3.1	94
					1047	7.9	241
					1702	2.9	88
					2324	7.1	216

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0527	3.0	91	16 Su	0030	8.4	256
	1153	8.0	244		0622	1.6	49
	1809	2.6	79		1256	8.9	271
					1851	1.4	43
2 Su	0030	7.4	226	17 M	0134	8.9	271
	0633	2.5	76		0723	1.1	34
	1252	8.4	256		1352	9.2	280
	1902	2.1	64		1947	0.9	27
3 M	0128	8.0	244	18 Tu	0224	9.4	287
	0723	1.9	58		0813	0.6	18
	1347	8.9	271		1442	9.4	287
	1947	1.5	46		2032	0.6	18
4 Tu	0216	8.7	265	19 W	0309	9.7	296
	0811	1.2	37		0858	0.3	9
	1433	9.3	283		1523	9.6	293
	2029	0.8	24		2114	0.4	12
5 W	0300	9.4	287	20 Th	0347	10.0	305
	0853	0.5	15		0938	0.1	3
	1516	9.7	296		1601	9.6	293
	2111	0.3	9		2152	0.3	9
6 Th	0342	10.0	305	21 F	0423	10.0	305
	0937	0.0	0		1015	0.1	3
	1557	10.0	305		1637	9.5	290
	2151	-0.1	-3		2228	0.4	12
7 F	0423	10.5	320	22 Sa	0456	9.9	302
	1019	-0.4	-12		1052	0.2	6
	1639	10.1	308		1710	9.2	280
	2232	-0.4	-12		2304	0.7	21
8 Sa	0503	10.7	326	23 Su	0529	9.7	296
	1101	-0.5	-15		1128	0.5	15
	1723	10.0	305		1744	8.9	271
	2314	-0.4	-12		2339	1.0	30
9 Su	0547	10.7	326	24 M	0605	9.4	287
	1145	-0.4	-12		1205	1.0	30
	1805	9.7	296		1821	8.5	259
	2357	-0.2	-6				
10 M	0632	10.5	320	25 Tu	0015	1.5	46
	1232	-0.1	-3		0642	8.9	271
	1853	9.3	283		1244	1.4	43
					1901	8.0	244
11 Tu	0045	0.3	9	26 W	0053	2.0	61
	0722	10.1	308		0725	8.5	259
	1322	0.5	15		1325	1.9	58
	1946	8.8	268		1943	7.6	232
12 W	0138	0.8	24	27 Th	0138	2.4	73
	0818	9.6	293		0810	8.1	247
	1418	1.0	30		1412	2.4	73
	2046	8.3	253		2036	7.3	223
13 Th	0239	1.4	43	28 F	0230	2.8	85
	0921	9.1	277		0907	7.8	238
	1521	1.5	46		1506	2.7	82
	2155	8.0	244		2139	7.2	219
14 F	0350	1.8	55	29 Sa	0334	3.0	91
	1034	8.8	268		1011	7.7	235
	1635	1.8	55		1611	2.7	82
	2316	8.0	244		2245	7.3	223
15 Sa	0510	1.9	58	30 Su	0448	2.8	85
	1147	8.7	265		1114	7.8	238
	1748	1.7	52		1717	2.5	76
					2351	7.7	235

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0553	2.3	70	16 Tu	0110	8.9	271
	1214	8.2	250		0707	1.2	37
	1817	2.0	61		1334	8.6	262
					1921	1.3	40
2 Tu	0049	8.4	256	17 W	0158	9.3	283
	0651	1.6	49		0753	0.8	24
	1312	8.6	262		1419	8.8	268
	1907	1.4	43		2006	1.1	34
3 W	0139	9.1	277	18 Th	0240	9.5	290
	0741	0.8	24		0835	0.5	15
	1400	9.2	280		1459	8.9	271
	1955	0.7	21		2045	0.9	27
4 Th	0224	9.9	302	19 F	0317	9.7	296
	0826	0.0	0		0913	0.3	9
	1446	9.6	293		1535	9.0	274
	2040	0.1	3		2123	0.8	24
5 F	0309	10.5	320	20 Sa	0350	9.8	299
	0911	-0.6	-18		0950	0.2	6
	1531	9.9	302		1610	9.0	274
	2123	-0.3	-9		2159	0.8	24
6 Sa	0354	10.9	332	21 Su	0424	9.7	296
	0954	-0.9	-27		1025	0.3	9
	1617	10.1	308		1644	8.9	271
	2207	-0.6	-18		2236	1.0	30
7 Su	0438	11.1	338	22 M	0458	9.5	290
	1039	-1.0	-30		1101	0.5	15
	1702	10.0	305		1718	8.7	265
	2254	-0.5	-15		2310	1.3	40
8 M	0525	11.0	335	23 Tu	0533	9.2	280
	1125	-0.8	-24		1136	0.8	24
	1749	9.8	299		1755	8.4	256
	2341	-0.2	-6		2348	1.6	49
9 Tu	0613	10.6	323	24 W	0610	8.9	271
	1213	-0.4	-12		1213	1.2	37
	1840	9.4	287		1837	8.1	247
10 W	0032	0.3	9	25 Th	0027	2.0	61
	0706	10.0	305		0653	8.5	259
	1305	0.2	6		1253	1.6	49
	1938	8.9	271		1919	7.8	238
11 Th	0127	0.9	27	26 F	0111	2.3	70
	0807	9.4	287		0740	8.1	247
	1402	0.9	27		1336	2.0	61
	2039	8.5	259		2010	7.6	232
12 F	0230	1.5	46	27 Sa	0202	2.5	76
	0910	8.8	268		0833	7.8	238
	1503	1.5	46		1427	2.2	67
	2152	8.3	253		2105	7.6	232
13 Sa	0342	1.8	55	28 Su	0300	2.6	79
	1022	8.4	256		0932	7.7	235
	1616	1.8	55		1521	2.4	73
	2305	8.3	253		2206	7.8	238
14 Su	0500	1.9	58	29 M	0409	2.5	76
	1132	8.3	253		1033	7.7	235
	1727	1.8	55		1626	2.2	67
					2305	8.2	250
15 M	0011	8.6	262	30 Tu	0514	2.0	61
	0611	1.6	49		1133	8.0	244
	1236	8.4	256		1728	1.9	58
	1830	1.6	49				
				31 W	0004	8.8	268
					0614	1.3	40
					1230	8.4	256
					1825	1.3	40

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0057	9.5	290	16 F	0206	9.2	280
	0707	0.6	18		0811	0.9	27
	1324	8.9	271		1432	8.3	253
	1920	0.7	21		2019	1.5	46
2 F	0149	10.2	311	17 Sa	0245	9.3	283
	0757	-0.2	-6		0848	0.7	21
	1416	9.4	287		1511	8.4	256
	2009	0.1	3		2058	1.4	43
3 Sa	0240	10.7	326	18 Su	0320	9.4	287
	0845	-0.8	-24		0925	0.6	18
	1506	9.8	299		1548	8.5	259
	2058	-0.3	-9		2136	1.3	40
4 Su	0327	11.1	338	19 M	0356	9.4	287
	0933	-1.1	-34		1002	0.5	15
	1556	10.0	305		1625	8.6	262
	2147	-0.5	-15		2212	1.4	43
5 M	0417	11.2	341	20 Tu	0432	9.4	287
	1020	-1.2	-37		1038	0.6	18
	1647	10.0	305		1701	8.5	259
	2236	-0.5	-15		2249	1.5	46
6 Tu	0508	11.0	335	21 W	0510	9.2	280
	1108	-1.0	-30		1112	0.7	21
	1738	9.9	302		1739	8.4	256
	2327	-0.2	-6		2327	1.6	49
7 W	0600	10.6	323	22 Th	0549	8.9	271
	1157	-0.6	-18		1149	1.0	30
	1832	9.6	293		1818	8.3	253
8 Th	0021	0.2	6	23 F	0007	1.8	55
	0653	10.0	305		0630	8.6	262
	1248	0.0	0		1226	1.2	37
	1930	9.3	283		1900	8.2	250
9 F	0117	0.8	24	24 Sa	0048	1.9	58
	0751	9.3	283		0713	8.3	253
	1343	0.7	21		1307	1.5	46
	2031	9.0	274		1945	8.2	250
10 Sa	0218	1.3	40	25 Su	0138	2.1	64
	0852	8.7	265		0802	8.1	247
	1442	1.3	40		1354	1.7	52
	2134	8.7	265		2035	8.2	250
11 Su	0326	1.7	52	26 M	0230	2.1	64
	0958	8.3	253		0853	7.9	241
	1547	1.7	52		1444	1.8	55
	2240	8.6	262		2127	8.4	256
12 M	0440	1.8	55	27 Tu	0330	2.0	61
	1105	8.0	244		0949	7.8	238
	1656	1.9	58		1540	1.8	55
	2345	8.7	265		2224	8.7	265
13 Tu	0546	1.7	52	28 W	0435	1.7	52
	1206	7.9	241		1049	7.9	241
	1757	1.9	58		1644	1.6	49
					2321	9.2	280
14 W	0038	8.8	268	29 Th	0536	1.2	37
	0641	1.5	46		1150	8.2	250
	1302	8.0	244		1745	1.3	40
	1851	1.8	55				
15 Th	0124	9.0	274	30 F	0020	9.7	296
	0729	1.2	37		0636	0.6	18
	1352	8.1	247		1251	8.6	262
	1937	1.6	49		1846	0.8	24

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0118	10.2	311	16 Su	0216	8.9	271
	0731	-0.1	-3		0826	1.1	34
	1350	9.0	274		1451	7.9	241
	1944	0.3	9		2034	1.9	58
2 Su	0213	10.6	323	17 M	0256	9.0	274
	0824	-0.6	-18		0904	0.9	27
	1448	9.5	290		1532	8.2	250
	2037	-0.1	-3		2114	1.7	52
3 M	0308	10.9	332	18 Tu	0335	9.2	280
	0914	-1.0	-30		0941	0.7	21
	1543	9.8	299		1610	8.4	256
	2131	-0.4	-12		2154	1.5	46
4 Tu	0402	11.0	335	19 W	0415	9.2	280
	1004	-1.2	-37		1016	0.6	18
	1637	10.1	308		1647	8.6	262
	2223	-0.4	-12		2231	1.4	43
5 W	0454	10.9	332	20 Th	0451	9.2	280
	1053	-1.1	-34		1052	0.6	18
	1730	10.1	308		1724	8.7	265
	2316	-0.3	-9		2310	1.3	40
6 Th	0547	10.5	320	21 F	0530	9.1	277
	1141	-0.8	-24		1127	0.6	18
	1822	10.0	305		1803	8.8	268
					2348	1.3	40
7 F	0008	0.1	3	22 Sa	0610	8.9	271
	0640	10.0	305		1203	0.7	21
	1231	-0.3	-9		1840	8.8	268
	1917	9.8	299				
8 Sa	0103	0.6	18	23 Su	0029	1.3	40
	0733	9.4	287		0648	8.6	262
	1322	0.4	12		1242	0.9	27
	2010	9.4	287		1919	8.9	271
9 Su	0159	1.1	34	24 M	0114	1.4	43
	0825	8.7	265		0733	8.4	256
	1415	1.0	30		1324	1.0	30
	2104	9.1	277		2002	9.0	274
10 M	0259	1.5	46	25 Tu	0202	1.4	43
	0921	8.1	247		0818	8.1	247
	1513	1.6	49		1410	1.2	37
	2201	8.8	268		2052	9.0	274
11 Tu	0403	1.8	55	26 W	0256	1.4	43
	1021	7.7	235		0910	7.9	241
	1611	2.1	64		1505	1.4	43
	2255	8.6	262		2147	9.2	280
12 W	0508	2.0	61	27 Th	0357	1.4	43
	1122	7.4	226		1010	7.8	238
	1713	2.3	70		1605	1.4	43
	2353	8.5	259		2245	9.3	283
13 Th	0606	1.9	58	28 F	0501	1.1	34
	1222	7.4	226		1115	7.9	241
	1813	2.4	73		1713	1.4	43
					2348	9.6	293
14 F	0043	8.6	262	29 Sa	0606	0.7	21
	0659	1.7	52		1222	8.2	250
	1318	7.5	229		1819	1.1	34
	1904	2.3	70				
15 Sa	0131	8.7	265	30 Su	0052	9.9	302
	0744	1.4	43		0707	0.2	6
	1408	7.7	235		1331	8.6	262
	1952	2.1	64		1923	0.7	21
				31 M	0155	10.3	314
					0805	-0.3	-9
					1434	9.2	280
					2024	0.2	6

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

SALINA CRUZ, MEXICO, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0527	3.5	107	16 Tu	0013	-0.2	-6
	1149	-0.4	-12		0617	3.4	104
	1800	3.2	98		1232	-0.5	-15
					1853	3.5	107
2 Tu	0003	-0.1	-3	17 W	0103	0.0	0
	0608	3.3	101		0659	3.1	94
	1224	-0.5	-15		1313	-0.4	-12
	1845	3.4	104		1938	3.5	107
3 W	0051	-0.1	-3	18 Th	0152	0.1	3
	0649	3.1	94		0743	2.9	88
	1301	-0.5	-15		1349	-0.2	-6
	1931	3.6	110		2023	3.4	104
4 Th	0144	0.0	0	19 F	0239	0.3	9
	0733	2.9	88		0825	2.6	79
	1344	-0.5	-15		1428	-0.1	-3
	2020	3.7	113		2106	3.4	104
5 F	0239	0.1	3	20 Sa	0330	0.4	12
	0821	2.7	82		0909	2.4	73
	1429	-0.5	-15		1509	0.1	3
	2111	3.8	116		2150	3.3	101
6 Sa	0338	0.1	3	21 Su	0423	0.5	15
	0914	2.5	76		0959	2.2	67
	1519	-0.5	-15		1551	0.2	6
	2208	3.9	119		2239	3.3	101
7 Su	0439	0.2	6	22 M	0519	0.5	15
	1015	2.4	73		1050	2.1	64
	1615	-0.4	-12		1637	0.3	9
	2307	3.9	119		2330	3.3	101
8 M	0543	0.1	3	23 Tu	0615	0.5	15
	1120	2.4	73		1149	2.0	61
	1718	-0.4	-12		1732	0.3	9
9 Tu	0007	3.9	119	24 W	0022	3.3	101
	0645	0.0	0		0709	0.4	12
	1228	2.4	73		1248	2.1	64
	1823	-0.3	-9		1828	0.3	9
10 W	0108	3.9	119	25 Th	0115	3.4	104
	0747	-0.1	-3		0758	0.3	9
	1335	2.6	79		1344	2.2	67
	1929	-0.3	-9		1928	0.3	9
11 Th	0206	3.9	119	26 F	0206	3.5	107
	0843	-0.3	-9		0843	0.1	3
	1438	2.8	85		1435	2.5	76
	2035	-0.3	-9		2026	0.1	3
12 F	0302	3.9	119	27 Sa	0252	3.5	107
	0933	-0.5	-15		0925	-0.1	-3
	1536	3.1	94		1525	2.8	85
	2134	-0.3	-9		2119	0.0	0
13 Sa	0356	3.8	116	28 Su	0340	3.5	107
	1021	-0.6	-18		1002	-0.2	-6
	1630	3.3	101		1610	3.1	94
	2230	-0.3	-9		2210	-0.1	-3
14 Su	0445	3.7	113	29 M	0424	3.5	107
	1108	-0.6	-18		1040	-0.4	-12
	1721	3.4	104		1653	3.4	104
	2324	-0.3	-9		2301	-0.2	-6
15 M	0531	3.6	110	30 Tu	0506	3.4	104
	1150	-0.6	-18		1120	-0.5	-15
	1809	3.5	107		1738	3.7	113
					2350	-0.2	-6
				31 W	0548	3.3	101
					1158	-0.6	-18
					1824	3.9	119

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0038	-0.2	-6	16 F	0120	0.1	3
	0632	3.2	98		0711	2.9	88
	1238	-0.7	-21		1311	-0.1	-3
	1911	4.1	125		1941	3.6	110
2 F	0129	-0.1	-3	17 Sa	0203	0.2	6
	0715	3.0	91		0749	2.7	82
	1323	-0.7	-21		1348	0.0	0
	2000	4.1	125		2021	3.5	107
3 Sa	0222	0.0	0	18 Su	0248	0.4	12
	0804	2.8	85		0829	2.5	76
	1408	-0.6	-18		1424	0.1	3
	2050	4.1	125		2103	3.4	104
4 Su	0319	0.1	3	19 M	0334	0.5	15
	0858	2.7	82		0914	2.3	70
	1501	-0.5	-15		1506	0.3	9
	2146	4.0	122		2150	3.4	104
5 M	0413	0.2	6	20 Tu	0427	0.6	18
	0955	2.5	76		1003	2.2	67
	1558	-0.3	-9		1554	0.4	12
	2246	3.8	116		2241	3.3	101
6 Tu	0521	0.2	6	21 W	0522	0.6	18
	1104	2.5	76		1100	2.2	67
	1705	-0.1	-3		1651	0.4	12
	2349	3.7	113		2337	3.3	101
7 W	0625	0.2	6	22 Th	0617	0.6	18
	1215	2.6	79		1203	2.3	70
	1814	0.0	0		1756	0.4	12
8 Th	0052	3.6	110	23 F	0036	3.3	101
	0725	0.1	3		0710	0.4	12
	1324	2.7	82		1305	2.5	76
	1924	0.0	0		1901	0.3	9
9 F	0153	3.6	110	24 Sa	0130	3.3	101
	0821	-0.1	-3		0759	0.3	9
	1425	3.0	91		1401	2.8	85
	2029	0.0	0		2004	0.2	6
10 Sa	0248	3.6	110	25 Su	0223	3.4	104
	0913	-0.2	-6		0841	0.0	0
	1525	3.2	98		1452	3.2	98
	2126	-0.1	-3		2059	0.0	0
11 Su	0339	3.5	107	26 M	0313	3.4	104
	1000	-0.3	-9		0923	-0.2	-6
	1611	3.4	104		1541	3.6	110
	2220	-0.1	-3		2155	-0.2	-6
12 M	0429	3.5	107	27 Tu	0400	3.4	104
	1042	-0.4	-12		1006	-0.4	-12
	1700	3.6	110		1627	4.0	122
	2307	-0.1	-3		2245	-0.3	-9
13 Tu	0511	3.4	104	28 W	0442	3.4	104
	1123	-0.4	-12		1048	-0.6	-18
	1742	3.7	113		1713	4.2	128
	2353	-0.1	-3		2334	-0.4	-12
14 W	0553	3.3	101				
	1200	-0.4	-12				
	1822	3.7	113				
15 Th	0038	0.0	0				
	0632	3.1	94				
	1238	-0.3	-9				
	1902	3.7	113				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0528	3.4	104	16 F	0010	0.0	0
	1131	-0.7	-21		0604	3.1	94
	1801	4.4	134		1200	0.0	0
					1826	3.9	119
2 F	0023	-0.4	-12	17 Sa	0049	0.1	3
	0613	3.3	101		0640	2.9	88
	1215	-0.7	-21		1235	0.1	3
	1850	4.4	134		1903	3.8	116
3 Sa	0112	-0.3	-9	18 Su	0128	0.2	6
	0701	3.2	98		0717	2.8	85
	1303	-0.6	-18		1312	0.2	6
	1938	4.3	131		1941	3.7	113
4 Su	0204	-0.1	-3	19 M	0210	0.4	12
	0751	3.0	91		0756	2.6	79
	1353	-0.5	-15		1348	0.3	9
	2029	4.2	128		2021	3.6	110
5 M	0258	0.0	0	20 Tu	0253	0.5	15
	0845	2.9	88		0839	2.5	76
	1445	-0.3	-9		1430	0.4	12
	2126	3.9	119		2106	3.4	104
6 Tu	0356	0.2	6	21 W	0339	0.6	18
	0947	2.8	85		0925	2.5	76
	1548	0.0	0		1522	0.5	15
	2227	3.7	113		2158	3.3	101
7 W	0458	0.3	9	22 Th	0429	0.7	21
	1054	2.7	82		1024	2.5	76
	1657	0.2	6		1621	0.6	18
	2332	3.5	107		2253	3.2	98
8 Th	0601	0.3	9	23 F	0522	0.6	18
	1204	2.8	85		1124	2.7	82
	1809	0.3	9		1730	0.6	18
					2352	3.1	94
9 F	0036	3.3	101	24 Sa	0615	0.5	15
	0702	0.3	9		1225	3.0	91
	1311	3.0	91		1839	0.4	12
	1921	0.3	9				
10 Sa	0137	3.3	101	25 Su	0052	3.1	94
	0759	0.2	6		0706	0.3	9
	1411	3.2	98		1325	3.4	104
	2022	0.2	6		1943	0.2	6
11 Su	0233	3.3	101	26 M	0150	3.2	98
	0848	0.0	0		0757	0.1	3
	1504	3.4	104		1420	3.8	116
	2117	0.1	3		2041	0.0	0
12 M	0323	3.3	101	27 Tu	0243	3.3	101
	0931	-0.1	-3		0844	-0.2	-6
	1550	3.6	110		1511	4.2	128
	2207	0.0	0		2134	-0.2	-6
13 Tu	0407	3.3	101	28 W	0331	3.4	104
	1013	-0.1	-3		0931	-0.4	-12
	1631	3.8	116		1600	4.5	137
	2249	0.0	0		2226	-0.4	-12
14 W	0449	3.2	98	29 Th	0420	3.4	104
	1051	-0.1	-3		1019	-0.6	-18
	1711	3.9	119		1649	4.7	143
	2331	-0.1	-3		2315	-0.4	-12
15 Th	0527	3.2	98	30 F	0509	3.5	107
	1127	-0.1	-3		1106	-0.6	-18
	1750	3.9	119		1738	4.8	146
				31 Sa	0005	-0.4	-12
					0557	3.4	104
					1155	-0.6	-18
					1827	4.7	143

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

SALINA CRUZ, MEXICO, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0054	-0.3	-9	16 M	0059	0.3	9
	0646	3.4	104		0651	2.9	88
	1245	-0.5	-15		1240	0.4	12
	1917	4.5	137		1907	3.9	119
2 M	0144	-0.2	-6	17 Tu	0137	0.4	12
	0739	3.3	101		0731	2.8	85
	1341	-0.2	-6		1320	0.5	15
	2010	4.2	128		1946	3.7	113
3 Tu	0237	0.0	0	18 W	0216	0.5	15
	0837	3.2	98		0812	2.8	85
	1440	0.0	0		1404	0.6	18
	2106	3.8	116		2031	3.5	107
4 W	0334	0.2	6	19 Th	0258	0.6	18
	0939	3.1	94		0900	2.9	88
	1543	0.3	9		1500	0.7	21
	2208	3.5	107		2119	3.3	101
5 Th	0433	0.3	9	20 F	0343	0.6	18
	1047	3.1	94		0954	3.0	91
	1655	0.5	15		1601	0.8	24
	2311	3.3	101		2215	3.2	98
6 F	0534	0.4	12	21 Sa	0431	0.6	18
	1151	3.2	98		1054	3.3	101
	1807	0.6	18		1709	0.7	21
					2313	3.1	94
7 Sa	0019	3.1	94	22 Su	0524	0.5	15
	0633	0.4	12		1154	3.6	110
	1256	3.3	101		1818	0.6	18
	1914	0.5	15				
8 Su	0118	3.1	94	23 M	0013	3.1	94
	0724	0.4	12		0618	0.3	9
	1351	3.5	107		1253	4.0	122
	2011	0.4	12		1921	0.4	12
9 M	0211	3.1	94	24 Tu	0113	3.1	94
	0814	0.3	9		0713	0.1	3
	1439	3.7	113		1350	4.3	131
	2102	0.3	9		2019	0.1	3
10 Tu	0259	3.1	94	25 W	0209	3.2	98
	0856	0.2	6		0806	-0.1	-3
	1520	3.9	119		1443	4.7	143
	2145	0.2	6		2113	-0.1	-3
11 W	0340	3.1	94	26 Th	0304	3.4	104
	0937	0.2	6		0859	-0.3	-9
	1601	4.0	122		1533	4.9	149
	2226	0.1	3		2205	-0.2	-6
12 Th	0421	3.1	94	27 F	0355	3.5	107
	1012	0.2	6		0952	-0.4	-12
	1638	4.1	125		1624	5.0	152
	2306	0.1	3		2256	-0.3	-9
13 F	0501	3.1	94	28 Sa	0448	3.6	110
	1051	0.2	6		1045	-0.4	-12
	1716	4.1	125		1715	5.0	152
	2344	0.1	3		2345	-0.3	-9
14 Sa	0538	3.0	91	29 Su	0541	3.6	110
	1126	0.2	6		1138	-0.3	-9
	1752	4.1	125		1807	4.8	146
15 Su	0022	0.2	6	30 M	0035	-0.3	-9
	0615	3.0	91		0634	3.6	110
	1201	0.3	9		1232	-0.1	-3
	1829	4.0	122		1859	4.5	137

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0125	-0.1	-3	16 W	0108	0.5	15
	0731	3.6	110		0709	3.2	98
	1331	0.1	3		1301	0.8	24
	1951	4.2	128		1919	3.8	116
2 W	0216	0.1	3	17 Th	0144	0.6	18
	0827	3.6	110		0752	3.3	101
	1431	0.4	12		1346	0.9	27
	2047	3.8	116		2001	3.6	110
3 Th	0311	0.2	6	18 F	0224	0.6	18
	0927	3.5	107		0838	3.5	107
	1537	0.6	18		1443	0.9	27
	2146	3.5	107		2047	3.4	104
4 F	0407	0.4	12	19 Sa	0303	0.6	18
	1030	3.5	107		0930	3.7	113
	1645	0.8	24		1543	1.0	30
	2248	3.2	98		2138	3.3	101
5 Sa	0500	0.5	15	20 Su	0350	0.5	15
	1132	3.6	110		1026	3.9	119
	1754	0.8	24		1648	0.9	27
	2351	3.1	94		2234	3.1	94
6 Su	0556	0.6	18	21 M	0443	0.4	12
	1230	3.7	113		1125	4.2	128
	1856	0.8	24		1754	0.8	24
					2337	3.1	94
7 M	0047	3.0	91	22 Tu	0536	0.3	9
	0646	0.6	18		1223	4.5	137
	1319	3.8	116		1857	0.6	18
	1950	0.7	21				
8 Tu	0142	3.0	91	23 W	0039	3.2	98
	0733	0.6	18		0636	0.2	6
	1405	4.0	122		1321	4.8	146
	2038	0.6	18		1955	0.4	12
9 W	0227	3.0	91	24 Th	0138	3.3	101
	0819	0.6	18		0733	0.0	0
	1447	4.1	125		1415	5.0	152
	2123	0.5	15		2051	0.2	6
10 Th	0312	3.0	91	25 F	0237	3.4	104
	0858	0.6	18		0832	-0.1	-3
	1528	4.2	128		1510	5.1	155
	2201	0.4	12		2143	0.0	0
11 F	0353	3.1	94	26 Sa	0335	3.6	110
	0937	0.5	15		0928	-0.1	-3
	1605	4.3	131		1602	5.1	155
	2240	0.3	9		2235	-0.1	-3
12 Sa	0434	3.1	94	27 Su	0430	3.8	116
	1016	0.5	15		1027	-0.1	-3
	1644	4.3	131		1655	5.1	155
	2319	0.3	9		2324	-0.1	-3
13 Su	0511	3.1	94	28 M	0526	3.9	119
	1054	0.6	18		1122	0.0	0
	1723	4.3	131		1748	4.9	149
	2357	0.3	9				
14 M	0550	3.1	94	29 Tu	0014	-0.1	-3
	1134	0.6	18		0621	4.0	122
	1801	4.2	128		1221	0.2	6
					1838	4.6	140
15 Tu	0033	0.4	12	30 W	0104	0.0	0
	0629	3.1	94		0717	4.0	122
	1215	0.7	21		1320	0.5	15
	1838	4.0	122		1930	4.2	128
				31 Th	0154	0.2	6
					0813	4.0	122
					1420	0.7	21
					2024	3.9	119

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0244	0.3	9	16 Sa	0151	0.6	18
	0910	4.0	122		0818	4.1	125
	1521	0.9	27		1429	1.1	34
	2120	3.6	110		2018	3.6	110
2 Sa	0334	0.5	15	17 Su	0232	0.5	15
	1007	4.0	122		0908	4.3	131
	1623	1.0	30		1525	1.1	34
	2215	3.3	101		2106	3.4	104
3 Su	0425	0.7	21	18 M	0318	0.5	15
	1102	4.0	122		1000	4.5	137
	1728	1.1	34		1628	1.1	34
	2312	3.1	94		2203	3.3	101
4 M	0513	0.8	24	19 Tu	0409	0.4	12
	1154	4.0	122		1059	4.6	140
	1826	1.1	34		1728	1.0	30
					2304	3.3	101
5 Tu	0008	3.0	91	20 W	0505	0.4	12
	0602	0.9	27		1157	4.8	146
	1244	4.1	125		1833	0.9	27
	1918	1.0	30				
6 W	0103	3.0	91	21 Th	0007	3.3	101
	0648	0.9	27		0605	0.3	9
	1331	4.2	128		1256	5.0	152
	2009	0.9	27		1933	0.7	21
7 Th	0153	3.0	91	22 F	0113	3.4	104
	0734	0.9	27		0709	0.3	9
	1412	4.3	131		1353	5.1	155
	2054	0.8	24		2028	0.5	15
8 F	0239	3.0	91	23 Sa	0217	3.6	110
	0817	0.9	27		0811	0.2	6
	1454	4.4	134		1449	5.1	155
	2136	0.7	21		2124	0.3	9
9 Sa	0323	3.1	94	24 Su	0317	3.8	116
	0902	0.9	27		0912	0.2	6
	1536	4.5	137		1545	5.1	155
	2215	0.6	18		2214	0.2	6
10 Su	0405	3.2	98	25 M	0415	4.0	122
	0946	0.8	24		1013	0.3	9
	1616	4.5	137		1637	5.0	152
	2253	0.6	18		2305	0.1	3
11 M	0448	3.3	101	26 Tu	0511	4.2	128
	1028	0.8	24		1111	0.4	12
	1657	4.4	134		1729	4.8	146
	2329	0.6	18		2353	0.1	3
12 Tu	0527	3.4	104	27 W	0605	4.3	131
	1114	0.8	24		1208	0.5	15
	1736	4.3	131		1818	4.6	140
13 W	0004	0.6	18	28 Th	0041	0.2	6
	0609	3.5	107		0658	4.3	131
	1159	0.9	27		1304	0.7	21
	1813	4.2	128		1907	4.3	131
14 Th	0039	0.6	18	29 F	0127	0.3	9
	0648	3.7	113		0751	4.3	131
	1245	0.9	27		1400	0.9	27
	1853	4.0	122		1957	4.0	122
15 F	0115	0.6	18	30 Sa	0213	0.5	15
	0733	3.9	119		0842	4.3	131
	1336	1.0	30		1455	1.1	34
	1935	3.8	116		2045	3.7	113

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

SALINA CRUZ, MEXICO, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0258	0.6	18	16 M	0205	0.4	12
	0932	4.2	128		0845	4.7	143
	1551	1.2	37		1505	1.1	34
	2137	3.4	104		2042	3.5	107
2 M	0342	0.8	24	17 Tu	0250	0.4	12
	1024	4.2	128		0938	4.7	143
	1650	1.3	40		1604	1.1	34
	2228	3.2	98		2137	3.4	104
3 Tu	0428	1.0	30	18 W	0345	0.4	12
	1113	4.2	128		1036	4.8	146
	1747	1.3	40		1706	1.1	34
	2321	3.0	91		2239	3.4	104
4 W	0514	1.1	34	19 Th	0444	0.5	15
	1201	4.2	128		1135	4.8	146
	1841	1.3	40		1808	1.0	30
					2346	3.4	104
5 Th	0015	3.0	91	20 F	0548	0.5	15
	0602	1.1	34		1236	4.8	146
	1250	4.3	131		1910	0.9	27
	1933	1.2	37				
6 F	0110	3.0	91	21 Sa	0055	3.5	107
	0652	1.1	34		0655	0.5	15
	1337	4.3	131		1335	4.8	146
	2019	1.1	34		2009	0.7	21
7 Sa	0203	3.1	94	22 Su	0201	3.7	113
	0743	1.1	34		0801	0.5	15
	1422	4.4	134		1435	4.8	146
	2104	1.0	30		2102	0.6	18
8 Su	0251	3.2	98	23 M	0303	3.9	119
	0832	1.0	30		0904	0.5	15
	1508	4.5	137		1529	4.8	146
	2144	0.9	27		2154	0.4	12
9 M	0337	3.4	104	24 Tu	0400	4.2	128
	0921	1.0	30		1003	0.5	15
	1550	4.5	137		1621	4.7	143
	2224	0.8	24		2243	0.3	9
10 Tu	0420	3.6	110	25 W	0454	4.4	134
	1009	0.9	27		1058	0.5	15
	1632	4.5	137		1710	4.6	140
	2259	0.7	21		2329	0.2	6
11 W	0502	3.8	116	26 Th	0544	4.5	137
	1057	0.9	27		1152	0.6	18
	1712	4.4	134		1757	4.4	134
	2334	0.6	18				
12 Th	0544	4.0	122	27 F	0012	0.3	9
	1144	0.9	27		0635	4.5	137
	1753	4.2	128		1243	0.7	21
					1842	4.2	128
13 F	0009	0.6	18	28 Sa	0054	0.4	12
	0626	4.2	128		0720	4.5	137
	1230	0.9	27		1331	0.9	27
	1831	4.1	125		1928	3.9	119
14 Sa	0045	0.5	15	29 Su	0139	0.5	15
	0711	4.4	134		0807	4.4	134
	1320	1.0	30		1421	1.1	34
	1911	3.9	119		2012	3.7	113
15 Su	0123	0.4	12	30 M	0218	0.7	21
	0756	4.5	137		0852	4.3	131
	1412	1.0	30		1511	1.2	37
	1955	3.7	113		2054	3.4	104
				31 Tu	0300	0.9	27
					0938	4.2	128
					1603	1.3	40
					2143	3.2	98

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0343	1.0	30	16 Th	0327	0.4	12
	1025	4.1	125		1014	4.6	140
	1659	1.4	43		1644	1.0	30
	2235	3.0	91		2222	3.4	104
2 Th	0428	1.1	34	17 F	0430	0.5	15
	1117	4.1	125		1115	4.5	137
	1755	1.4	43		1746	1.0	30
	2330	3.0	91		2333	3.4	104
3 F	0520	1.2	37	18 Sa	0541	0.6	18
	1209	4.1	125		1220	4.4	134
	1850	1.4	43		1848	0.9	27
4 Sa	0028	3.0	91	19 Su	0044	3.5	107
	0615	1.2	37		0650	0.6	18
	1302	4.2	128		1321	4.3	131
	1942	1.2	37		1947	0.8	24
5 Su	0124	3.1	94	20 M	0150	3.8	116
	0714	1.1	34		0756	0.6	18
	1351	4.2	128		1419	4.3	131
	2027	1.1	34		2042	0.6	18
6 M	0217	3.3	101	21 Tu	0250	4.0	122
	0809	1.0	30		0859	0.5	15
	1439	4.3	131		1515	4.3	131
	2107	0.9	27		2131	0.4	12
7 Tu	0305	3.5	107	22 W	0344	4.2	128
	0902	0.9	27		0952	0.5	15
	1524	4.3	131		1604	4.3	131
	2147	0.8	24		2218	0.3	9
8 W	0351	3.8	116	23 Th	0433	4.4	134
	0952	0.8	24		1045	0.4	12
	1609	4.3	131		1650	4.2	128
	2224	0.6	18		2301	0.3	9
9 Th	0433	4.1	125	24 F	0518	4.5	137
	1040	0.7	21		1133	0.5	15
	1648	4.2	128		1733	4.1	125
	2301	0.5	15		2342	0.3	9
10 F	0517	4.4	134	25 Sa	0603	4.5	137
	1128	0.6	18		1218	0.5	15
	1728	4.1	125		1815	3.9	119
	2337	0.3	9				
11 Sa	0600	4.6	140	26 Su	0022	0.4	12
	1214	0.6	18		0645	4.4	134
	1810	4.0	122		1301	0.7	21
					1856	3.7	113
12 Su	0016	0.3	9	27 M	0101	0.5	15
	0645	4.7	143		0727	4.3	131
	1303	0.7	21		1343	0.8	24
	1851	3.8	116		1936	3.5	107
13 M	0058	0.2	6	28 Tu	0138	0.6	18
	0731	4.8	146		0808	4.2	128
	1352	0.8	24		1429	1.0	30
	1936	3.7	113		2018	3.3	101
14 Tu	0142	0.2	6	29 W	0217	0.8	24
	0823	4.8	146		0852	4.0	122
	1445	0.9	27		1518	1.1	34
	2025	3.6	110		2101	3.1	94
15 W	0231	0.3	9	30 Th	0259	0.9	27
	0916	4.7	143		0938	3.9	119
	1541	1.0	30		1610	1.2	37
	2121	3.4	104		2150	3.0	91
				31 F	0348	1.0	30
					1031	3.8	116
					1705	1.3	40
					2246	2.9	88

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0444	1.1	34	16 Su	0539	0.6	18
	1127	3.7	113		1205	3.8	116
	1801	1.3	40		1826	0.7	21
	2346	3.0	91				
2 Su	0546	1.1	34	17 M	0035	3.5	107
	1222	3.7	113		0649	0.6	18
	1853	1.2	37		1311	3.7	113
					1924	0.6	18
3 M	0045	3.1	94	18 Tu	0137	3.7	113
	0649	1.0	30		0755	0.5	15
	1318	3.8	116		1406	3.7	113
	1940	1.0	30		2017	0.5	15
4 Tu	0141	3.4	104	19 W	0233	3.9	119
	0747	0.8	24		0851	0.4	12
	1407	3.8	116		1459	3.7	113
	2023	0.8	24		2104	0.3	9
5 W	0230	3.7	113	20 Th	0322	4.1	125
	0844	0.6	18		0941	0.3	9
	1456	3.9	119		1545	3.7	113
	2104	0.6	18		2149	0.2	6
6 Th	0318	4.1	125	21 F	0407	4.2	128
	0933	0.4	12		1027	0.2	6
	1541	3.9	119		1629	3.7	113
	2145	0.3	9		2231	0.2	6
7 F	0403	4.4	134	22 Sa	0449	4.3	131
	1022	0.3	9		1111	0.2	6
	1623	3.9	119		1711	3.6	110
	2226	0.1	3		2308	0.2	6
8 Sa	0449	4.6	140	23 Su	0530	4.3	131
	1109	0.2	6		1153	0.2	6
	1707	3.9	119		1749	3.5	107
	2307	0.0	0		2345	0.3	9
9 Su	0535	4.8	146	24 M	0608	4.2	128
	1155	0.2	6		1232	0.3	9
	1749	3.8	116		1827	3.3	101
	2349	-0.1	-3				
10 M	0621	4.8	146	25 Tu	0022	0.4	12
	1243	0.2	6		0648	4.1	125
	1834	3.7	113		1311	0.5	15
					1906	3.2	98
11 Tu	0035	-0.1	-3	26 W	0101	0.5	15
	0709	4.8	146		0725	3.9	119
	1331	0.4	12		1352	0.6	18
	1922	3.6	110		1945	3.0	91
12 W	0123	0.0	0	27 Th	0139	0.6	18
	0800	4.6	140		0808	3.7	113
	1424	0.5	15		1435	0.8	24
	2013	3.5	107		2026	2.9	88
13 Th	0219	0.2	6	28 F	0223	0.7	21
	0854	4.4	134		0853	3.6	110
	1519	0.6	18		1521	0.9	27
	2111	3.4	104		2115	2.8	85
14 F	0318	0.4	12	29 Sa	0313	0.8	24
	0954	4.1	125		0946	3.4	104
	1620	0.7	21		1612	1.0	30
	2216	3.3	101		2211	2.8	85
15 Sa	0427	0.5	15	30 Su	0415	0.9	27
	1059	3.9	119		1040	3.3	101
	1724	0.8	24		1705	0.9	27
	2326	3.4	104		2307	3.0	91

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0520	0.8	24	16 Tu	0023	3.5	107
	1139	3.2	98		0647	0.4	12
	1756	0.9	27		1250	3.0	91
					1857	0.4	12
2 Tu	0008	3.2	98	17 W	0121	3.6	110
	0626	0.7	21		0747	0.3	9
	1239	3.2	98		1347	3.0	91
	1847	0.7	21		1947	0.3	9
3 W	0105	3.5	107	18 Th	0211	3.8	116
	0726	0.5	15		0839	0.2	6
	1332	3.2	98		1438	3.1	94
	1934	0.5	15		2033	0.2	6
4 Th	0156	3.9	119	19 F	0257	3.9	119
	0822	0.2	6		0925	0.0	0
	1422	3.3	101		1525	3.1	94
	2020	0.2	6		2115	0.2	6
5 F	0246	4.2	128	20 Sa	0339	4.0	122
	0912	0.0	0		1006	0.0	0
	1510	3.4	104		1605	3.1	94
	2107	-0.1	-3		2157	0.1	3
6 Sa	0333	4.5	137	21 Su	0419	4.0	122
	1001	-0.2	-6		1046	-0.1	-3
	1557	3.5	107		1645	3.1	94
	2152	-0.3	-9		2234	0.1	3
7 Su	0421	4.7	143	22 M	0457	4.0	122
	1048	-0.3	-9		1125	-0.1	-3
	1642	3.5	107		1723	3.0	91
	2239	-0.4	-12		2313	0.2	6
8 M	0509	4.8	146	23 Tu	0534	3.9	119
	1135	-0.3	-9		1204	0.0	0
	1729	3.5	107		1801	3.0	91
	2328	-0.4	-12		2348	0.2	6
9 Tu	0557	4.7	143	24 W	0611	3.8	116
	1224	-0.2	-6		1242	0.1	3
	1819	3.5	107		1839	2.9	88
10 W	0019	-0.3	-9	25 Th	0030	0.3	9
	0648	4.5	137		0650	3.6	110
	1313	-0.1	-3		1320	0.2	6
	1909	3.5	107		1919	2.8	85
11 Th	0111	-0.2	-6	26 F	0109	0.4	12
	0738	4.2	128		0731	3.4	104
	1405	0.0	0		1400	0.3	9
	2005	3.4	104		2000	2.8	85
12 F	0210	0.0	0	27 Sa	0154	0.5	15
	0836	3.9	119		0813	3.2	98
	1459	0.2	6		1439	0.5	15
	2106	3.3	101		2047	2.8	85
13 Sa	0314	0.3	9	28 Su	0248	0.6	18
	0935	3.6	110		0902	3.0	91
	1559	0.3	9		1522	0.5	15
	2212	3.3	101		2139	2.9	88
14 Su	0425	0.4	12	29 M	0349	0.6	18
	1041	3.3	101		0954	2.8	85
	1659	0.4	12		1609	0.5	15
	2320	3.3	101		2235	3.1	94
15 M	0538	0.5	15	30 Tu	0454	0.6	18
	1147	3.1	94		1054	2.7	82
	1759	0.4	12		1700	0.4	12
					2332	3.3	101
				31 W	0600	0.4	12
					1154	2.7	82
					1754	0.3	9

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0028	3.6	110	16 F	0145	3.6	110
	0700	0.2	6		0818	0.1	3
	1251	2.7	82		1412	2.5	76
	1847	0.0	0		1959	0.2	6
2 F	0122	4.0	122	17 Sa	0227	3.7	113
	0756	0.0	0		0904	-0.1	-3
	1347	2.8	85		1459	2.6	79
	1940	-0.2	-6		2041	0.1	3
3 Sa	0214	4.3	131	18 Su	0309	3.7	113
	0849	-0.3	-9		0945	-0.2	-6
	1438	3.0	91		1541	2.6	79
	2032	-0.4	-12		2123	0.1	3
4 Su	0305	4.5	137	19 M	0349	3.8	116
	0939	-0.5	-15		1026	-0.2	-6
	1531	3.1	94		1621	2.7	82
	2123	-0.6	-18		2203	0.1	3
5 M	0356	4.6	140	20 Tu	0427	3.8	116
	1027	-0.6	-18		1102	-0.2	-6
	1622	3.3	101		1658	2.7	82
	2216	-0.6	-18		2242	0.1	3
6 Tu	0445	4.6	140	21 W	0506	3.7	113
	1116	-0.7	-21		1138	-0.2	-6
	1713	3.4	104		1737	2.7	82
	2311	-0.6	-18		2323	0.1	3
7 W	0536	4.5	137	22 Th	0544	3.6	110
	1204	-0.6	-18		1215	-0.2	-6
	1806	3.4	104		1816	2.7	82
8 Th	0004	-0.5	-15	23 F	0005	0.2	6
	0627	4.2	128		0621	3.4	104
	1254	-0.5	-15		1251	-0.1	-3
	1859	3.4	104		1856	2.8	85
9 F	0102	-0.3	-9	24 Sa	0047	0.3	9
	0720	3.9	119		0702	3.2	98
	1344	-0.4	-12		1325	0.0	0
	1957	3.4	104		1938	2.8	85
10 Sa	0202	-0.1	-3	25 Su	0136	0.3	9
	0817	3.5	107		0744	3.0	91
	1437	-0.2	-6		1401	0.1	3
	2057	3.3	101		2021	2.9	88
11 Su	0308	0.1	3	26 M	0226	0.4	12
	0916	3.1	94		0824	2.8	85
	1531	-0.1	-3		1439	0.1	3
	2159	3.3	101		2109	3.1	94
12 M	0417	0.3	9	27 Tu	0324	0.4	12
	1018	2.9	88		0915	2.6	79
	1631	0.1	3		1523	0.1	3
	2302	3.4	104		2201	3.3	101
13 Tu	0527	0.3	9	28 W	0429	0.4	12
	1124	2.6	79		1011	2.4	73
	1726	0.2	6		1612	0.0	0
					2257	3.5	107
14 W	0001	3.4	104	29 Th	0530	0.3	9
	0632	0.3	9		1110	2.4	73
	1226	2.5	76		1706	-0.1	-3
	1820	0.2	6		2354	3.8	116
15 Th	0055	3.5	107	30 F	0632	0.1	3
	0729	0.2	6		1210	2.4	73
	1323	2.5	76		1805	-0.3	-9
	1911	0.2	6				

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0049	4.0	122	16 Su	0156	3.5	107
	0729	-0.1	-3		0838	0.0	0
	1311	2.5	76		1430	2.3	70
	1902	-0.4	-12		2006	0.2	6
2 Su	0147	4.3	131	17 M	0239	3.6	110
	0825	-0.4	-12		0920	-0.1	-3
	1411	2.7	82		1512	2.4	73
	2002	-0.6	-18		2051	0.2	6
3 M	0240	4.4	134	18 Tu	0321	3.6	110
	0916	-0.6	-18		0958	-0.2	-6
	1507	2.9	88		1557	2.5	76
	2101	-0.7	-21		2136	0.1	3
4 Tu	0334	4.4	134	19 W	0402	3.6	110
	1007	-0.7	-21		1037	-0.2	-6
	1602	3.1	94		1636	2.6	79
	2158	-0.7	-21		2218	0.1	3
5 W	0426	4.4	134	20 Th	0441	3.6	110
	1057	-0.8	-24		1114	-0.3	-9
	1659	3.3	101		1716	2.7	82
	2256	-0.6	-18		2304	0.1	3
6 Th	0518	4.2	128	21 F	0520	3.5	107
	1145	-0.9	-27		1148	-0.3	-9
	1753	3.4	104		1755	2.8	85
	2353	-0.5	-15		2347	0.1	3
7 F	0610	4.0	122	22 Sa	0558	3.3	101
	1234	-0.8	-24		1222	-0.2	-6
	1847	3.5	107		1834	3.0	91
8 Sa	0051	-0.4	-12	23 Su	0032	0.1	3
	0703	3.6	110		0637	3.1	94
	1323	-0.7	-21		1254	-0.2	-6
	1943	3.5	107		1914	3.1	94
9 Su	0152	-0.2	-6	24 M	0119	0.2	6
	0756	3.3	101		0714	2.9	88
	1413	-0.5	-15		1328	-0.2	-6
	2042	3.5	107		1956	3.3	101
10 M	0255	0.0	0	25 Tu	0208	0.3	9
	0852	2.9	88		0754	2.7	82
	1503	-0.3	-9		1405	-0.2	-6
	2137	3.4	104		2041	3.4	104
11 Tu	0359	0.2	6	26 W	0303	0.3	9
	0949	2.6	79		0841	2.5	76
	1556	-0.1	-3		1445	-0.3	-9
	2233	3.4	104		2132	3.6	110
12 W	0505	0.3	9	27 Th	0359	0.3	9
	1048	2.4	73		0932	2.4	73
	1648	0.0	0		1535	-0.3	-9
	2330	3.4	104		2226	3.7	113
13 Th	0606	0.3	9	28 F	0501	0.2	6
	1148	2.2	67		1031	2.3	70
	1739	0.1	3		1631	-0.4	-12
					2324	3.9	119
14 F	0021	3.4	104	29 Sa	0601	0.1	3
	0702	0.2	6		1134	2.3	70
	1247	2.2	67		1731	-0.4	-12
	1831	0.2	6				
15 Sa	0110	3.4	104	30 Su	0023	4.0	122
	0752	0.1	3		0702	-0.1	-3
	1339	2.2	67		1241	2.4	73
	1920	0.2	6		1836	-0.4	-12
				31 M	0122	4.1	125
					0758	-0.3	-9
					1347	2.7	82
					1940	-0.5	-15

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

GUAYMAS, MEXICO, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0253	1.8	55	16	0211	1.6	49
M	0637	1.5	46	Tu	1739	0.3	9
	0937	1.7	52				
	1835	-0.5	-15				
2	0316	1.8	55	17	0158	1.5	46
Tu	1857	0.0	0	W	1423	0.3	9
3	0332	1.8	55	18	0031	1.6	49
W	1403	0.4	12	Th	1359	0.0	0
4	0344	1.8	55	19	0017	1.8	55
Th	1303	-0.1	-3	F	1357	-0.3	-9
5	0348	1.9	58	20	0036	2.0	61
F	1319	-0.7	-21	Sa	1403	-0.6	-18
	2100	1.6*	49*				
6	0327	2.1	64	21	0054	2.0	61
Sa	1346	-1.2	-37	Su	0700	1.5*	46*
	2100	1.9*	58*		1415	-0.9	-27
7	0414	2.2	67	22	0133	2.0	61
Su	1423	-1.6	-49	M	0800	1.5*	46*
	2100	1.8*	55*		1431	-1.2	-37
					2100	1.6*	49*
8	0547	2.3	70	23	0600	2.0	61
M	1501	-1.9	-58	Tu	1457	-1.4	-43
	2346	2.3	70		2317	2.0	61
9	0220	2.2	67	24	0205	1.8	55
Tu	0650	2.4	73	W	0705	2.2	67
	1536	-2.0	-61		1520	-1.6	-49
					2328	2.0	61
10	0011	2.3	70	25	0245	1.7	52
W	0254	2.1	64	Th	0747	2.3	70
	0739	2.5	76		1547	-1.6	-49
	1609	-1.9	-58		2346	2.0	61
11	0033	2.1	64	26	0321	1.6	49
Th	0325	2.0	61	F	0825	2.3	70
	0824	2.4	73		1616	-1.6	-49
	1641	-1.7	-52				
12	0054	2.0	61	27	0008	2.0	61
F	0404	1.8	55	Sa	0359	1.4	43
	0852	2.2	67		0904	2.2	67
	1708	-1.4	-43		1644	-1.4	-43
13	0123	1.9	58	28	0027	1.9	58
Sa	0443	1.6	49	Su	0441	1.2	37
	0918	2.0	61		0939	2.0	61
	1732	-1.0	-30		1713	-1.0	-30
14	0141	1.7	52	29	0047	1.8	55
Su	0528	1.4	43	M	0532	0.9	27
	0930	1.7	52		1021	1.7	52
	1750	-0.5	-15		1735	-0.5	-15
15	0201	1.6	49	30	0057	1.7	52
M	0626	1.2	37	Tu	0624	0.7	21
	0927	1.3	40		1103	1.2	37
	1755	-0.1	-3		1746	0.0	0
				31	0055	1.7	52
				W	0734	0.4	12
					1236	0.7	21
					1727	0.5	15

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0025	1.8	55	16	1311	0.1	3
Th	0930	0.1	3	F	2308	2.1	64
	2354	2.0	61				
2	1218	-0.5	-15	17	1319	-0.2	-6
F	2345	2.2	67	Sa	2323	2.2	67
3	1307	-0.9	-27	18	1333	-0.5	-15
Sa	2343	2.4	73	Su	2331	2.2	67
4	1346	-1.3	-40	19	1348	-0.7	-21
Su	2330	2.4	73	M	2305	2.1	64
5	0600	1.9*	58*	20	0600	1.6*	49*
M	1425	-1.6	-49	Tu	1407	-1.0	-30
	2311	2.3	70		2221	2.1	64
6	0800	1.9*	58*	21	0324	1.8	55
Tu	1457	-1.7	-52	W	0626	1.9	58
	2306	2.2	67		1428	-1.2	-37
					2221	2.1	64
7	0334	1.9	58	22	0231	1.6	49
W	0728	2.2	67	Th	0723	2.1	64
	1526	-1.6	-49		1454	-1.3	-40
	2314	2.1	64		2229	2.1	64
8	0325	1.6	49	23	0252	1.3	40
Th	0817	2.2	67	F	0812	2.2	67
	1552	-1.5	-46		1523	-1.3	-40
	2327	2.0	61		2244	2.1	64
9	0343	1.4	43	24	0321	1.0	30
F	0859	2.1	64	Sa	0857	2.2	67
	1614	-1.2	-37		1550	-1.1	-34
	2340	1.9	58		2258	2.0	61
10	0409	1.1	34	25	0400	0.7	21
Sa	0938	2.0	61	Su	0943	2.1	64
	1635	-0.9	-27		1615	-0.7	-21
	2353	1.8	55		2311	2.0	61
11	0437	0.8	24	26	0435	0.3	9
Su	1010	1.7	52	M	1034	1.9	58
	1650	-0.5	-15		1640	-0.2	-6
					2317	2.0	61
12	0001	1.7	52	27	0517	0.0	0
M	0509	0.6	18	Tu	1134	1.5	46
	1039	1.4	43		1659	0.3	9
	1701	-0.1	-3		2314	2.0	61
	2356	1.7	52	28	0606	-0.2	-6
13	0548	0.5	15	W	1309	1.2	37
Tu	1108	1.1	34		1657	0.9	27
	1702	0.3	9		2254	2.1	64
	2330	1.7	52				
14	0627	0.3	9				
W	1112	0.8	24				
	1633	0.6	18				
	2305	1.8	55				
15	0719	0.3	9				
Th	1106	0.5	15				
	1307	0.4	12				
	2301	2.0	61				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0702	-0.3	-9	16	0629	-0.1	-3
Th	2234	2.3	70	F	2202	2.3	70
2	0831	-0.4	-12	17	0725	0.0	0
F	2227	2.5	76	Sa	2215	2.4	73
3	1126	-0.6	-18	18	0925	0.0	0
Sa	2225	2.6	79	Su	2228	2.4	73
4	1242	-0.9	-27	19	1218	-0.2	-6
Su	2227	2.6	79	M	2221	2.3	70
5	1335	-1.1	-34	20	1248	-0.5	-15
M	2218	2.5	76	Tu	2131	2.2	67
6	1407	-1.1	-34	21	1317	-0.6	-18
Tu	2208	2.3	70	W	2111	2.2	67
7	0354	1.6	49	22	0302	1.5	46
W	0658	1.8	55	Th	0633	1.7	52
	1438	-1.1	-34		1346	-0.7	-21
	2206	2.2	67		2113	2.2	67
8	0329	1.4	43	23	0226	1.2	37
Th	0754	1.9	58	F	0735	1.9	58
	1500	-0.9	-27		1417	-0.7	-21
	2207	2.1	64		2123	2.2	67
9	0323	1.1	34	24	0241	0.8	24
F	0839	2.0	61	Sa	0827	2.1	64
	1518	-0.6	-18		1445	-0.5	-15
	2216	2.0	61		2134	2.2	67
10	0335	0.7	21	25	0313	0.3	9
Sa	0921	1.9	58	Su	0920	2.1	64
	1533	-0.3	-9		1514	-0.1	-3
	2225	2.0	61		2145	2.2	67
11	0353	0.4	12	26	0345	-0.2	-6
Su	1000	1.8	55	M	1016	2.1	64
	1548	0.0	0		1543	0.3	9
	2229	2.0	61		2153	2.3	70
12	0418	0.1	3	27	0422	-0.5	-15
M	1039	1.7	52	Tu	1119	1.9	58
	1603	0.3	9		1605	0.9	27
	2228	2.0	61		2154	2.3	70
13	0447	0.0	0	28	0504	-0.8	-24
Tu	1121	1.5	46	W	1244	1.7	52
	1611	0.6	18		1613	1.4	43
	2213	2.0	61		2147	2.4	73
14	0515	-0.1	-3	29	0551	-0.9	-27
W	1215	1.2	37	Th	2131	2.6	79
	1606	0.9	27				
	2157	2.1	64				
15	0547	-0.2	-6	30	0646	-0.8	-24
Th	2154	2.2	67	F	2124	2.7	82
				31	0806	-0.7	-21
				Sa	2124	2.8	85

Time meridian 105° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Times and Heights of High and Low Waters

APRIL						MAY						JUNE					
	Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		Time	Height
Day			Day			Day			Day			Day			Day		
	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm
1	1020	-0.6	-18	16 0812	-0.1	-3	1 1047	-0.1	-3	16 0830	0.0	0	1 0239	1.1	34	16 0221	1.4	43
Su	2121	2.8	85	M 2137	2.6	79	Tu 1951	2.7	82	W 1848	2.6	79	F 0705	1.4	43	Sa 0544	1.6	49
													0933	1.3	40	0854	1.4	43
													1821	2.6	79	1715	2.9	88
2	1203	-0.6	-18	17 0943	-0.1	-3	2 1143	0.2	6	17 0933	0.3	9	2 0234	0.7	21	17 0118	0.9	27
M	2115	2.6	79	Tu 2049	2.4	73	W 1942	2.5	76	Th 1836	2.6	79	Sa 1826	2.7	82	Su 1726	3.0	91
3	1259	-0.5	-15	18 1110	-0.1	-3	3 0312	1.1	34	18 1034	0.6	18	3 0236	0.4	12	18 0129	0.3	9
Tu	2102	2.5	76	W 2005	2.4	73	Th 0627	1.4	43	F 1840	2.6	79	Su 1831	2.8	85	M 1741	3.2	98
							1232	0.5	15									
							1939	2.4	73									
4	0348	1.4	43	19 1201	-0.1	-3	4 0300	0.8	24	19 0154	1.0	30	4 0237	0.1	3	19 0201	-0.3	-9
W	0611	1.5	46	Th 1959	2.4	73	F 0741	1.5	46	Sa 0653	1.6	49	M 1835	2.9	88	Tu 1803	3.4	104
	1335	-0.4	-12				1251	0.8	24	1133	1.0	30						
	2055	2.3	70				1942	2.4	73	1850	2.7	82						
5	0322	1.1	34	20 0233	1.3	40	5 0250	0.5	15	20 0145	0.4	12	5 0251	-0.1	-3	20 0240	-0.7	-21
Th	0716	1.6	49	F 0637	1.6	49	Sa 0836	1.7	52	Su 0814	1.9	58	Tu 1842	3.0	91	W 1100	3.1*	94*
	1402	-0.2	-6	1246	0.0	0	1305	1.1	34	1222	1.4	43				1835	3.6	110
	2056	2.2	67	2004	2.4	73	1946	2.5	76	1901	2.8	85						
6	0310	0.8	24	21 0207	0.8	24	6 0252	0.2	6	21 0210	-0.2	-6	6 0309	-0.3	-9	21 0322	-1.0	-30
F	0812	1.7	52	Sa 0746	1.8	55	Su 0925	1.8	55	M 0928	2.3	70	W 1853	3.1	94	Th 1200	3.2*	98*
	1418	0.1	3	1325	0.2	6	1323	1.4	43	1312	1.8	55				1907	3.7	113
	2058	2.2	67	2015	2.5	76	1951	2.5	76	1914	2.9	88						
7	0308	0.5	15	22 0224	0.2	6	7 0300	-0.1	-3	22 0245	-0.7	-21	7 0336	-0.4	-12	22 0406	-1.1	-34
Sa	0857	1.8	55	Su 0850	2.0	61	M 1013	1.9	58	Tu 1036	2.5	76	Th 1909	3.2	98	F 1200	3.2*	98*
	1429	0.4	12	1400	0.6	18	1341	1.6	49	1351	2.2	67				1942	3.7	113
	2104	2.2	67	2025	2.5	76	1956	2.6	79	1927	3.1	94						
8	0319	0.2	6	23 0257	-0.3	-9	8 0319	-0.4	-12	23 0324	-1.1	-34	8 0407	-0.5	-15	23 0449	-1.0	-30
Su	0941	1.8	55	M 0949	2.2	67	Tu 1103	2.0	61	W 1145	2.7	82	F 1930	3.3	101	Sa 1300	3.2*	98*
	1447	0.6	18	1436	1.0	30	1400	1.8	55	1421	2.5	76				2011	3.6	110
	2108	2.2	67	2036	2.6	79	1949	2.7	82	1938	3.3	101						
9	0334	-0.1	-3	24 0333	-0.8	-24	9 0344	-0.5	-15	24 0408	-1.3	-40	9 0437	-0.5	-15	24 0527	-0.8	-24
M	1024	1.8	55	Tu 1055	2.3	70	W 1155	2.1	64	Th 1951	3.4	104	Sa 1954	3.3	101	Su 1300	2.9*	88*
	1502	0.9	27	1504	1.5	46	1418	2.0	61							2036	3.4	104
	2109	2.3	70	2040	2.7	82	1954	2.8	85									
10	0400	-0.3	-9	25 0411	-1.1	-34	10 0413	-0.6	-18	25 0453	-1.3	-40	10 0512	-0.5	-15	25 0604	-0.4	-12
Tu	1109	1.7	52	W 1212	2.3	70	Th 1955	2.9	88	F 1957	3.4	104	Su 2016	3.3	101	M 1300	2.7*	82*
	1514	1.2	37	1529	1.9	58										2027	3.1	94
	2100	2.3	70	2041	2.8	85												
11	0424	-0.5	-15	26 0457	-1.3	-40	11 0445	-0.6	-18	26 0540	-1.2	-37	11 0545	-0.4	-12	26 0636	0.1	3
W	1210	1.7	52	Th 2035	3.0	91	F 2009	3.0	91	Sa 2002	3.3	101	M 2041	3.2	98	Tu 1547	2.9	88
	1522	1.4	43															
	2053	2.4	73															
12	0453	-0.5	-15	27 0545	-1.2	-37	12 0517	-0.6	-18	27 0628	-0.8	-24	12 0620	-0.2	-6	27 0000	2.4*	73*
Th	2056	2.5	76	F 2031	3.0	91	Sa 2026	3.0	91	Su 2000	3.2	98	Tu 1400	2.5*	76*	W 0655	0.6	18
													2059	3.0	91	1605	2.8	85
																2300	2.3*	70*
13	0525	-0.5	-15	28 0638	-1.0	-30	13 0556	-0.5	-15	28 0715	-0.4	-12	13 0655	0.1	3	28 0706	1.1	34
F	2102	2.6	79	Sa 2029	3.1	94	Su 2046	3.0	91	M 1933	3.0	91	W 1649	2.8	85	Th 1622	2.8	85
14	0604	-0.4	-12	29 0745	-0.7	-21	14 0640	-0.3	-9	29 0801	0.1	3	14 0000	2.4*	73*	29 0627	1.5	46
Sa	2116	2.7	82	Su 2028	3.0	91	M 2101	2.9	88	Tu 1824	2.8	85	Th 0731	0.4	12	F 1633	2.8	85
													1654	2.8	85			
15	0655	-0.2	-6	30 0914	-0.3	-9	15 0733	-0.2	-6	30 0843	0.5	15	15 0813	0.9	27	30 0207	1.2	37
Su	2129	2.7	82	M 2018	2.8	85	Tu 2049	2.7	82	W 1814	2.7	82	F 1704	2.8	85	Sa 1642	2.8	85
										31 0915	1.0	30						
										Th 1816	2.7	82						

Time meridian 105° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

GUAYMAS, MEXICO, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0211	0.9	27	16 M	0042	0.8	24
	1000	2.4*	73*		1426	3.3	101
	1639	2.9	88				
2 M	0219	0.6	18	17 Tu	0119	0.3	9
	0900	2.5*	76*		1454	3.5	107
	1619	3.0	91				
3 Tu	0227	0.4	12	18 W	0201	-0.2	-6
	1000	2.7*	82*		0900	3.1*	94*
	1651	3.2	98		1718	3.6	110
4 W	0247	0.1	3	19 Th	0239	-0.5	-15
	1000	2.8*	85*		1000	3.4*	104*
	1748	3.3	101		1830	3.7	113
5 Th	0306	0.0	0	20 F	0321	-0.7	-21
	1100	2.9*	88*		1154	3.5	107
	1833	3.4	104		1433	3.4	104
					1932	3.8	116
6 F	0330	-0.2	-6	21 Sa	0357	-0.6	-18
	1200	3.0*	91*		1212	3.4	104
	1912	3.5	107		1511	3.2	98
					2021	3.8	116
7 Sa	0358	-0.3	-9	22 Su	0432	-0.4	-12
	1200	3.0*	91*		1235	3.3	101
	1947	3.5	107		1551	3.0	91
					2103	3.6	110
8 Su	0426	-0.3	-9	23 M	0500	-0.1	-3
	1300	3.0	91		1259	3.2	98
	1521	2.9	88		1633	2.8	85
	2012	3.5	107		2139	3.4	104
9 M	0455	-0.2	-6	24 Tu	0529	0.3	9
	1332	3.0	91		1321	3.1	94
	1608	2.9	88		1719	2.6	79
	2048	3.4	104		2200	3.0	91
10 Tu	0525	0.0	0	25 W	0547	0.8	24
	1355	3.0	91		1336	3.0	91
	1701	2.8	85		1811	2.4	73
	2116	3.2	98		2215	2.6	79
11 W	0552	0.3	9	26 Th	0552	1.3	40
	1419	3.0	91		1347	2.9	88
	1804	2.6	79		1912	2.2	67
	2151	2.9	88		2200	2.3	70
12 Th	0617	0.7	21	27 F	0400	1.8*	55*
	1435	2.9	88		0545	1.7	52
	1923	2.4	73		1333	2.9	88
	2223	2.5	76				
13 F	0639	1.2	37	28 Sa	0142	1.8	55
	1447	2.9	88		1212	3.0	91
14 Sa	0639	1.7	52	29 Su	0128	1.5	46
	1445	3.0	91		1154	3.2	98
15 Su	0024	1.4	43	30 M	0143	1.2	37
	1432	3.1	94		1207	3.3	101
				31 Tu	0155	0.9	27
					1227	3.4	104

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0213	0.6	18	16 Th	0156	0.0	0
	1305	3.4	104		1045	3.7	113
					1559	3.3	101
					1800	3.4	104
2 Th	0233	0.4	12	17 F	0234	-0.2	-6
	0900	3.0*	91*		1040	3.6	110
	1806	3.3	101		1501	3.3	101
					1912	3.6	110
3 F	0252	0.2	6	18 Sa	0307	-0.2	-6
	1107	3.2	98		1048	3.5	107
	1341	3.1	94		1459	3.0	91
	1905	3.5	107		2004	3.6	110
4 Sa	0312	0.1	3	19 Su	0336	0.0	0
	1111	3.2	98		1103	3.4	104
	1418	3.0	91		1522	2.7	82
	1947	3.6	110		2053	3.6	110
5 Su	0357	0.0	0	20 M	0400	0.3	9
	1127	3.2	98		1115	3.2	98
	1457	2.8	85		1551	2.4	73
	2023	3.6	110		2135	3.4	104
6 M	0403	0.1	3	21 Tu	0422	0.7	21
	1142	3.2	98		1129	3.2	98
	1539	2.6	79		1623	2.1	64
	2101	3.6	110		2217	3.2	98
7 Tu	0427	0.2	6	22 W	0437	1.1	34
	1202	3.2	98		1135	3.1	94
	1617	2.4	73		1652	1.8	55
	2136	3.4	104		2257	2.9	88
8 W	0453	0.5	15	23 Th	0451	1.5	46
	1215	3.1	94		1135	3.0	91
	1703	2.2	67		1731	1.7	52
	2215	3.1	94		2338	2.6	79
9 Th	0518	1.0	30	24 F	0453	1.9	58
	1223	3.1	94		1109	3.1	94
	1748	2.0	61		1807	1.6	49
	2307	2.8	85				
10 F	0536	1.5	46	25 Sa	0100	2.2	67
	1220	3.1	94		0427	2.1	64
	1851	1.7	52		1036	3.2	98
					1856	1.6	49
11 Sa	0024	2.3	70	26 Su	1033	3.3	101
	0538	2.0	61		2015	1.5	46
	1201	3.2	98				
	2007	1.5	46				
12 Su	1145	3.4	104	27 M	1038	3.4	104
	2230	1.2	37				
13 M	1139	3.6	110	28 Tu	0055	1.3	40
					1052	3.5	107
14 Tu	0021	0.7	21	29 W	0123	1.0	30
	1132	3.7	113		1101	3.4	104
15 W	0114	0.3	9	30 Th	0141	0.8	24
	1117	3.7	113		1039	3.3	101
	1800	3.2*	98*		1900	2.8*	85*
				31 F	0200	0.6	18
					1000	3.3	101
					1504	3.0	91
					1832	3.1	94

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0218	0.4	12	16 Su	0240	0.4	12
	0954	3.3	101		0939	3.2	98
	1415	2.8	85		1500	2.1	64
	1920	3.3	101		2026	3.2	98
2 Su	0241	0.3	9	17 M	0258	0.7	21
	1002	3.2	98		0947	3.1	94
	1430	2.5	76		1512	1.7	52
	2004	3.4	104		2111	3.1	94
3 M	0303	0.4	12	18 Tu	0320	1.0	30
	1013	3.2	98		0955	3.1	94
	1457	2.2	67		1537	1.4	43
	2045	3.5	107		2154	3.0	91
4 Tu	0328	0.5	15	19 W	0335	1.3	40
	1026	3.2	98		1000	3.1	94
	1529	1.8	55		1559	1.1	34
	2130	3.4	104		2240	2.8	85
5 W	0356	0.8	24	20 Th	0347	1.7	52
	1036	3.2	98		0955	3.1	94
	1608	1.5	46		1627	0.9	27
	2220	3.2	98		2329	2.6	79
6 Th	0418	1.2	37	21 F	0355	2.0	61
	1042	3.2	98		0939	3.1	94
	1647	1.2	37		1659	0.8	24
	2317	2.9	88				
7 F	0436	1.7	52	22 Sa	0036	2.4	73
	1039	3.2	98		0353	2.2	67
	1733	1.0	30		0926	3.2	98
					1731	0.8	24
8 Sa	0039	2.6	79	23 Su	0922	3.3	101
	0447	2.2	67		1809	0.9	27
	1023	3.3	101				
	1825	0.8	24				
9 Su	1013	3.5	107	24 M	0927	3.4	104
	1934	0.8	24		1902	1.0	30
10 M	1004	3.7	113	25 Tu	0942	3.4	104
	2141	0.7	21		2045	1.1	34
11 Tu	1002	3.7	113	26 W	0950	3.3	101
	2357	0.5	15				
12 W	0957	3.7	113	27 Th	0000	0.9	27
					0941	3.2	98
13 Th	0054	0.3	9	28 F	0035	0.7	21
	0940	3.6	110		0857	3.1	94
14 F	0136	0.2	6	29 Sa	0059	0.6	18
	0930	3.5	107		0842	3.1	94
	1524	2.7	82		1449	2.3	70
	1845	3.0	91		1833	2.6	79
15 Sa	0212	0.2	6	30 Su	0127	0.5	15
	0935	3.3	101		0845	3.1	94
	1502	2.5	76		1413	2.0	61
	1938	3.1	94		1925	2.8	85

Time meridian 105° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0154	0.6	18	16 Tu	0213	1.2	37
	0853	3.1	94		0836	2.9	88
	1418	1.6	49		1500	0.6	18
	2015	2.9	88		2134	2.5	76
2 Tu	0219	0.7	21	17 W	0224	1.5	46
	0901	3.1	94		0837	2.9	88
	1446	1.1	34		1518	0.3	9
	2106	3.0	91		2221	2.5	76
3 W	0251	1.0	30	18 Th	0239	1.7	52
	0911	3.1	94		0835	2.9	88
	1518	0.6	18		1542	0.1	3
	2159	3.0	91		2309	2.4	73
4 Th	0316	1.4	43	19 F	0254	1.9	58
	0919	3.1	94		0829	3.0	91
	1553	0.2	6		1607	-0.1	-3
	2259	2.9	88				
5 F	0342	1.8	55	20 Sa	0009	2.3	70
	0919	3.2	98		0303	2.1	64
	1635	0.0	0		0823	3.0	91
					1637	-0.1	-3
6 Sa	0016	2.7	82	21 Su	0823	3.1	94
	0357	2.3	70		1709	0.0	0
	0913	3.3	101				
	1717	-0.1	-3				
7 Su	0904	3.4	104	22 M	0831	3.1	94
	1810	-0.1	-3		1747	0.1	3
8 M	0901	3.5	107	23 Tu	0847	3.1	94
	1919	0.0	0		1833	0.2	6
9 Tu	0855	3.6	110	24 W	0858	3.1	94
	2108	0.2	6		1939	0.4	12
10 W	0852	3.5	107	25 Th	0900	3.0	91
	2309	0.2	6		2112	0.5	15
11 Th	0840	3.4	104	26 F	0811	2.8	85
					2236	0.5	15
12 F	0019	0.3	9	27 Sa	0735	2.7	82
	0827	3.2	98		2334	0.5	15
	1518	2.0	61				
	1752	2.1	64				
13 Sa	0104	0.4	12	28 Su	0731	2.7	82
	0821	3.0	91		1430	1.5	46
	1459	1.7	52		1834	1.8	55
	1906	2.3	70				
14 Su	0136	0.6	18	29 M	0019	0.6	18
	0825	2.9	88		0735	2.7	82
	1450	1.4	43		1351	1.0	30
	1959	2.4	73		1937	2.1	64
15 M	0154	0.9	27	30 Tu	0055	0.8	24
	0830	2.9	88		0743	2.7	82
	1451	1.0	30		1406	0.5	15
	2050	2.5	76		2036	2.3	70
				31 W	0133	1.1	34
					0754	2.8	85
					1433	-0.1	-3
					2134	2.5	76

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0209	1.5	46	16 F	0147	1.9	58
	0759	2.9	88		0726	2.7	82
	1505	-0.6	-18		1528	-0.8	-24
	2236	2.6	79		2349	2.1	64
2 F	0241	1.9	58	17 Sa	0205	2.0	61
	0809	3.0	91		0730	2.7	82
	1545	-1.0	-30		1600	-0.8	-24
	2345	2.6	79				
3 Sa	0306	2.2	67	18 Su	0738	2.8	85
	0814	3.1	94		1625	-0.8	-24
	1627	-1.1	-34				
4 Su	0115	2.6	79	19 M	0748	2.8	85
	0317	2.5	76		1700	-0.8	-24
	0814	3.2	98				
	1715	-1.1	-34				
5 M	0815	3.3	101	20 Tu	0807	2.8	85
	1807	-1.0	-30		1734	-0.6	-18
6 Tu	0811	3.2	98	21 W	0826	2.7	82
	1906	-0.7	-21		1815	-0.5	-15
7 W	0804	3.1	94	22 Th	0841	2.6	79
	2021	-0.3	-9		1857	-0.3	-9
8 Th	0746	2.9	88	23 F	0833	2.4	73
	2151	0.0	0		1945	-0.1	-3
9 F	0717	2.8	85	24 Sa	0621	2.3	70
	2312	0.4	12		2045	0.2	6
10 Sa	0711	2.6	79	25 Su	0611	2.2	67
	1445	1.1	34		2147	0.5	15
	1816	1.4	43				
	2354	0.7	21				
11 Su	0712	2.5	76	26 M	0613	2.2	67
	1437	0.7	21		1354	0.7	21
	1937	1.6	49		1853	1.2	37
					2250	0.8	24
12 M	0030	1.0	30	27 Tu	0621	2.3	70
	0717	2.5	76		1332	0.1	3
	1435	0.4	12		2011	1.6	49
	2037	1.7	52		2355	1.2	37
13 Tu	0048	1.3	40	28 W	0629	2.4	73
	0720	2.5	76		1354	-0.5	-15
	1439	0.0	0		2113	1.9	58
	2129	1.9	58				
14 W	0106	1.6	49	29 Th	0044	1.5	46
	0722	2.5	76		0643	2.5	76
	1448	-0.3	-9		1425	-1.1	-34
	2218	2.0	61		2216	2.2	67
15 Th	0121	1.8	55	30 F	0130	1.9	58
	0725	2.6	79		0656	2.7	82
	1506	-0.6	-18		1501	-1.6	-49
	2300	2.1	64		2318	2.4	73

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0212	2.2	67	16 Su	0657	2.4	73
	0717	2.8	85		1554	-1.3	-40
	1543	-1.8	-55				
2 Su	0023	2.5	76	17 M	0100	2.0*	61*
	0241	2.4	73		0723	2.5	76
	0735	2.9	88		1623	-1.3	-40
	1626	-1.9	-58				
3 M	0100	2.5*	76*	18 Tu	0748	2.5	76
	0753	3.0	91		1652	-1.2	-37
	1714	-1.8	-55				
4 Tu	0200	2.4*	73*	19 W	0200	1.9*	58*
	0802	2.9	88		0813	2.4	73
	1758	-1.5	-46		1721	-1.1	-34
5 W	0200	2.2*	67*	20 Th	0200	1.9*	58*
	0803	2.7	82		0838	2.3	70
	1842	-1.1	-34		1753	-0.9	-27
6 Th	0730	2.4	73	21 F	0100	1.6*	49*
	1921	-0.6	-18		0857	2.1	64
					1821	-0.7	-21
7 F	0539	2.2	67	22 Sa	0354	1.8	55
	2000	0.0	0		0654	1.7	52
					0908	1.8	55
					1850	-0.3	-9
8 Sa	0541	2.1	64	23 Su	0409	1.8	55
	2019	0.5	15		1100	1.3*	40*
					1918	0.1	3
9 Su	0549	2.0	61	24 M	0417	1.8	55
	1420	0.4	12		1454	0.5	15
10 M	0555	2.0	61	25 Tu	0427	1.9	58
	1418	0.0	0		1315	0.1	3
11 Tu	0603	2.0	61	26 W	0442	2.0	61
	1423	-0.3	-9		1312	-0.6	-18
	2300	1.6*	49*				
12 W	0608	2.1	64	27 Th	0500	2.2	67
	1433	-0.7	-21		1344	-1.2	-37
	2200	1.7*	52*		2100	1.8*	55*
13 Th	0618	2.2	67	28 F	0532	2.3	70
	1445	-0.9	-27		1420	-1.7	-52
	2200	1.8*	55*		2200	2.1*	64*
14 F	0626	2.3	70	29 Sa	0613	2.5	76
	1503	-1.1	-34		1501	-2.0	-61
	2300	1.9*	58*		2340	2.4	73
15 Sa	0637	2.4	73	30 Su	0207	2.2	67
	1526	-1.2	-37		0657	2.6	79
	2300	1.9*	58*		1542	-2.2	-67
				31 M	0022	2.4	73
					0257	2.2	67
					0739	2.7	82
					1624	-2.2	-67

Time meridian 105° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

SAN DIEGO, CALIFORNIA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 M	0015	4.3	131	16 Tu	0047	4.7	143
	0518	2.2	67		0639	2.0	61
	1116	5.5	168		1211	4.1	125
	1816	-0.1	-3		1834	0.9	27
2 Tu	0100	4.6	140	17 W	0128	4.7	143
	0627	2.2	67		0754	2.1	64
	1209	4.7	143		1304	3.4	104
	1855	0.4	12		1903	1.5	46
3 W	0146	4.9	149	18 Th	0215	4.7	143
	0755	2.0	61		0935	1.9	58
	1324	3.9	119		1445	2.7	82
	1941	1.0	30		1938	2.1	64
4 Th	0242	5.2	158	19 F	0314	4.8	146
	0935	1.5	46		1117	1.4	43
	1512	3.3	101		1737	2.7	82
	2036	1.6	49		2031	2.5	76
5 F	0340	5.7	174	20 Sa	0417	5.0	152
	1104	0.7	21		1220	0.8	24
	1710	3.2	98		1915	3.0	91
	2148	2.0	61		2207	2.8	85
6 Sa	0440	6.1	186	21 Su	0513	5.3	162
	1213	-0.2	-6		1302	0.3	9
	1841	3.4	104		1951	3.3	101
	2300	2.2	67		2332	2.8	85
7 Su	0537	6.6	201	22 M	0602	5.6	171
	1305	-1.0	-30		1337	-0.2	-6
	1941	3.8	116		2019	3.5	107
8 M	0006	2.2	67	23 Tu	0025	2.6	79
	0630	7.0	213		0644	6.0	183
	1354	-1.5	-46		1409	-0.6	-18
	2027	4.1	125		2042	3.8	116
9 Tu	0102	2.1	64	24 W	0105	2.4	73
	0721	7.3	223		0723	6.4	195
	1437	-1.8	-55		1438	-1.0	-30
	2109	4.3	131		2107	4.0	122
10 W	0151	1.9	58	25 Th	0142	2.1	64
	0806	7.4	226		0756	6.6	201
	1518	-1.9	-58		1505	-1.2	-37
	2147	4.5	137		2132	4.2	128
11 Th	0239	1.8	55	26 F	0221	1.8	55
	0848	7.3	223		0833	6.8	207
	1556	-1.7	-52		1534	-1.2	-37
	2223	4.6	140		2157	4.4	134
12 F	0322	1.7	52	27 Sa	0300	1.6	49
	0930	7.0	213		0908	6.7	204
	1632	-1.4	-43		1603	-1.2	-37
	2258	4.6	140		2225	4.7	143
13 Sa	0404	1.7	52	28 Su	0339	1.4	43
	1009	6.4	195		0945	6.4	195
	1707	-0.9	-27		1633	-0.9	-27
	2336	4.7	143		2254	4.9	149
14 Su	0453	1.8	55	29 M	0425	1.2	37
	1048	5.7	174		1025	5.9	180
	1739	-0.4	-12		1702	-0.4	-12
					2326	5.1	155
15 M	0011	4.7	143	30 Tu	0518	1.2	37
	0540	1.9	58		1110	5.2	158
	1126	5.0	152		1734	0.1	3
	1807	0.3	9				
				31 W	0005	5.3	162
					0619	1.1	34
					1203	4.3	131
					1807	0.8	24

FEBRUARY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Th	0049	5.4	165	16 F	0040	4.8	146
	0738	1.1	34		0812	1.6	49
	1322	3.4	104		1346	2.5	76
	1848	1.5	46		1744	2.2	67
2 F	0145	5.5	168	17 Sa	0133	4.6	140
	0916	0.8	24		1021	1.4	43
	1526	2.9	88				
	1943	2.1	64				
3 Sa	0259	5.6	171	18 Su	0258	4.6	140
	1058	0.3	9		1148	0.9	27
	1745	3.0	91				
	2119	2.6	79				
4 Su	0420	5.9	180	19 M	0431	4.8	146
	1209	-0.4	-12		1233	0.3	9
	1900	3.5	107		1943	3.3	101
	2300	2.6	79		2314	2.9	88
5 M	0529	6.2	189	20 Tu	0536	5.2	158
	1303	-1.0	-30		1308	-0.2	-6
	1945	3.9	119		1954	3.6	110
6 Tu	0014	2.3	70	21 W	0014	2.5	76
	0630	6.6	201		0621	5.7	174
	1347	-1.4	-43		1337	-0.6	-18
	2021	4.3	131		2009	4.0	122
7 W	0108	1.9	58	22 Th	0055	2.1	64
	0719	6.8	207		0703	6.1	186
	1424	-1.6	-49		1405	-0.9	-27
	2050	4.6	140		2028	4.3	131
8 Th	0154	1.5	46	23 F	0135	1.6	49
	0801	6.9	210		0742	6.4	195
	1459	-1.5	-46		1432	-1.1	-34
	2119	4.8	146		2050	4.7	143
9 F	0236	1.3	40	24 Sa	0213	1.1	34
	0840	6.8	207		0817	6.5	198
	1531	-1.3	-40		1459	-1.1	-34
	2150	5.0	152		2115	5.1	155
10 Sa	0315	1.1	34	25 Su	0253	0.6	18
	0918	6.4	195		0859	6.4	195
	1558	-1.0	-30		1528	-0.9	-27
	2216	5.1	155		2140	5.4	165
11 Su	0351	1.0	30	26 M	0332	0.3	9
	0951	5.9	180		0938	6.0	183
	1624	-0.5	-15		1557	-0.5	-15
	2241	5.1	155		2212	5.7	174
12 M	0430	1.0	30	27 Tu	0417	0.0	0
	1025	5.3	162		1021	5.4	165
	1648	0.1	3		1626	0.0	0
	2309	5.1	155		2244	5.9	180
13 Tu	0510	1.1	34	28 W	0509	0.0	0
	1057	4.6	140		1110	4.6	140
	1707	0.7	21		1656	0.7	21
	2336	5.0	152		2321	6.0	183
14 W	0555	1.3	40				
	1136	3.9	119				
	1728	1.2	37				
15 Th	0005	4.9	149				
	0648	1.5	46				
	1224	3.2	98				
	1743	1.8	55				

MARCH

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Th	0611	0.1	3	16 F	0610	0.8	24
	1211	3.8	116		1205	3.0	91
	1729	1.4	43		1641	2.0	61
					2334	5.0	152
2 F	0007	5.8	177	17 Sa	0716	1.0	30
	0724	0.3	9		1338	2.5	76
	1337	3.1	94		1631	2.3	70
	1808	2.0	61				
3 Sa	0106	5.6	171	18 Su	0016	4.7	143
	0904	0.3	9		0905	1.1	34
	1607	2.9	88				
	1914	2.6	79				
4 Su	0231	5.4	165	19 M	0138	4.4	134
	1043	-0.1	-3		1045	0.8	24
	1806	3.3	101				
	2134	2.9	88				
5 M	0407	5.4	165	20 Tu	0333	4.5	137
	1153	-0.5	-15		1145	0.4	12
	1849	3.8	116		1859	3.5	107
	2319	2.5	76		2257	2.9	88
6 Tu	0526	5.7	174	21 W	0453	4.8	146
	1243	-0.9	-27		1220	0.0	0
	1924	4.2	128		1905	3.8	116
					2356	2.3	70
7 W	0022	2.0	61	22 Th	0550	5.2	158
	0622	6.0	183		1252	-0.4	-12
	1324	-1.0	-30		1923	4.3	131
	1952	4.6	140				
8 Th	0110	1.5	46	23 F	0038	1.6	49
	0710	6.1	186		0638	5.6	171
	1400	-1.0	-30		1321	-0.6	-18
	2018	4.9	149		1942	4.8	146
9 F	0152	1.0	30	24 Sa	0120	0.9	27
	0752	6.1	186		0721	5.8	177
	1428	-0.9	-27		1349	-0.6	-18
	2045	5.2	158		2003	5.3	162
10 Sa	0228	0.6	18	25 Su	0159	0.2	6
	0831	5.9	180		0805	5.8	177
	1453	-0.6	-18		1421	-0.5	-15
	2108	5.4	165		2029	5.8	177
11 Su	0302	0.4	12	26 M	0240	-0.4	-12
	0903	5.6	171		0847	5.7	174
	1519	-0.2	-6		1449	-0.2	-6
	2130	5.5	168		2100	6.2	189
12 M	0335	0.3	9	27 Tu	0323	-0.8	-24
	0936	5.2	158		0933	5.3	162
	1540	0.2	6		1521	0.2	6
	2154	5.5	168		2133	6.5	198
13 Tu	0409	0.3	9	28 W	0412	-1.0	-30
	1011	4.7	143		1022	4.8	146
	1559	0.7	21		1553	0.7	21
	2215	5.5	168		2208	6.6	201
14 W	0445	0.3	9	29 Th	0501	-1.0	-30
	1043	4.1	125		1118	4.1	125
	1617	1.2	37		1627	1.3	40
	2238	5.4	165		2250	6.4	195
15 Th	0521	0.5	15	30 F	0603	-0.8	-24
	1120	3.5	107		1227	3.5	107
	1633	1.6	49		1707	1.9	58
	2303	5.2	158		2339	6.0	183
				31 Sa	0716	-0.4	-12
					1405	3.1	94
					1757	2.5	76

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0045	5.6	171	16 M	0804	0.6	18
	0845	-0.2	-6				
	1615	3.2	98				
	1942	2.9	88				
2 M	0214	5.1	155	17 Tu	0045	4.5	137
	1014	-0.3	-9		0925	0.5	15
	1728	3.7	113		1745	3.3	101
	2154	2.8	85		2013	3.2	98
3 Tu	0351	5.0	152	18 W	0228	4.3	131
	1121	-0.4	-12		1027	0.4	12
	1812	4.2	128		1746	3.7	113
	2322	2.2	67		2226	2.7	82
4 W	0511	5.1	155	19 Th	0401	4.4	134
	1207	-0.5	-15		1114	0.2	6
	1847	4.6	140		1804	4.2	128
					2329	2.0	61
5 Th	0020	1.6	49	20 F	0513	4.6	140
	0609	5.2	158		1153	0.0	0
	1246	-0.4	-12		1824	4.8	146
	1915	5.0	152				
6 F	0105	1.0	30	21 Sa	0018	1.2	37
	0659	5.2	158		0609	4.8	146
	1318	-0.3	-9		1228	0.0	0
	1939	5.3	162		1849	5.4	165
7 Sa	0144	0.5	15	22 Su	0101	0.3	9
	0740	5.1	155		0702	5.0	152
	1347	0.0	0		1303	0.1	3
	2004	5.6	171		1918	6.0	183
8 Su	0216	0.1	3	23 M	0147	-0.6	-18
	0819	4.9	149		0753	5.0	152
	1414	0.3	9		1336	0.3	9
	2025	5.7	174		1950	6.5	198
9 M	0248	-0.2	-6	24 Tu	0229	-1.2	-37
	0852	4.7	143		0842	4.9	149
	1434	0.6	18		1411	0.6	18
	2047	5.8	177		2025	6.9	210
10 Tu	0320	-0.3	-9	25 W	0318	-1.6	-49
	0927	4.4	134		0935	4.6	140
	1455	1.0	30		1449	1.0	30
	2109	5.8	177		2104	7.1	216
11 W	0352	-0.3	-9	26 Th	0406	-1.8	-55
	1001	4.0	122		1029	4.3	131
	1516	1.4	43		1525	1.4	43
	2131	5.8	177		2144	7.0	213
12 Th	0427	-0.2	-6	27 F	0459	-1.7	-52
	1038	3.7	113		1128	3.9	119
	1534	1.7	52		1608	1.9	58
	2156	5.6	171		2230	6.7	204
13 F	0504	0.0	0	28 Sa	0557	-1.3	-40
	1120	3.3	101		1240	3.6	110
	1553	2.0	61		1659	2.3	70
	2221	5.4	165		2325	6.2	189
14 Sa	0548	0.2	6	29 Su	0703	-0.9	-27
	1216	2.9	88		1406	3.5	107
	1604	2.3	70		1811	2.7	82
	2254	5.2	158				
15 Su	0647	0.5	15	30 M	0029	5.5	168
	1356	2.7	82		0816	-0.6	-18
	1609	2.6	79		1535	3.7	113
	2339	4.9	149		1956	2.8	85

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0153	5.0	152	16 W	0016	4.7	143
	0929	-0.3	-9		0815	0.3	9
	1638	4.1	125		1542	3.6	110
	2146	2.5	76		2002	3.0	91
2 W	0322	4.6	140	17 Th	0135	4.3	131
	1029	-0.1	-3		0909	0.4	12
	1724	4.6	140		1621	4.1	125
	2309	1.9	58		2148	2.5	76
3 Th	0445	4.4	134	18 F	0312	4.1	125
	1119	0.1	3		1001	0.5	15
	1759	5.0	152		1653	4.7	143
					2258	1.7	52
4 F	0007	1.3	40	19 Sa	0434	4.0	122
	0548	4.3	131		1047	0.6	18
	1159	0.4	12		1725	5.3	162
	1830	5.3	162		2357	0.8	24
5 Sa	0051	0.7	21	20 Su	0550	4.1	125
	0643	4.3	131		1132	0.8	24
	1233	0.6	18		1801	6.0	183
	1857	5.6	171				
6 Su	0129	0.2	6	21 M	0046	-0.2	-6
	0728	4.2	128		0653	4.2	128
	1303	0.9	27		1217	1.0	30
	1921	5.8	177		1839	6.6	201
7 M	0204	-0.2	-6	22 Tu	0135	-1.0	-30
	0811	4.1	125		0750	4.3	131
	1328	1.2	37		1259	1.2	37
	1945	6.0	183		1919	7.1	216
8 Tu	0236	-0.5	-15	23 W	0224	-1.7	-52
	0850	4.0	122		0845	4.3	131
	1353	1.5	46		1341	1.4	43
	2010	6.1	186		2001	7.4	226
9 W	0311	-0.6	-18	24 Th	0312	-2.0	-61
	0926	3.8	116		0940	4.2	128
	1419	1.7	52		1427	1.7	52
	2035	6.1	186		2044	7.5	229
10 Th	0343	-0.6	-18	25 F	0401	-2.1	-64
	1005	3.6	110		1033	4.1	125
	1441	2.0	61		1512	1.9	58
	2100	6.0	183		2131	7.3	223
11 F	0418	-0.6	-18	26 Sa	0453	-1.9	-58
	1044	3.4	104		1131	4.0	122
	1505	2.2	67		1601	2.1	64
	2129	5.9	180		2221	6.9	210
12 Sa	0457	-0.4	-12	27 Su	0546	-1.6	-49
	1133	3.3	101		1232	4.0	122
	1532	2.4	73		1701	2.4	73
	2200	5.7	174		2312	6.3	192
13 Su	0536	-0.2	-6	28 M	0641	-1.1	-34
	1224	3.1	94		1334	4.0	122
	1559	2.6	79		1811	2.6	79
	2235	5.5	168				
14 M	0624	-0.1	-3	29 Tu	0011	5.6	171
	1333	3.1	94		0738	-0.6	-18
	1641	2.8	85		1439	4.2	128
	2320	5.1	155		1942	2.6	79
15 Tu	0719	0.1	3	30 W	0120	4.8	146
	1447	3.3	101		0831	0.0	0
	1800	3.0	91		1535	4.5	137
					2117	2.3	70
				31 Th	0238	4.2	128
					0923	0.4	12
					1624	4.9	149
					2240	1.8	55

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0406	3.8	116	16 Sa	0233	3.8	116
	1016	0.9	27		0851	1.0	30
	1705	5.2	158		1550	5.2	158
	2349	1.2	37		2236	1.4	43
2 Sa	0524	3.6	110	17 Su	0413	3.5	107
	1100	1.2	37		0947	1.3	40
	1741	5.5	168		1636	5.8	177
					2345	0.5	15
3 Su	0038	0.7	21	18 M	0543	3.5	107
	0630	3.5	107		1043	1.7	52
	1139	1.6	49		1723	6.4	195
	1812	5.8	177				
4 M	0116	0.2	6	19 Tu	0041	-0.4	-12
	0726	3.6	110		0657	3.7	113
	1217	1.8	55		1138	1.9	58
	1844	6.0	183		1812	6.9	210
5 Tu	0152	-0.2	-6	20 W	0130	-1.2	-37
	0811	3.6	110		0757	3.9	119
	1249	2.0	61		1230	2.0	61
	1913	6.1	186		1859	7.3	223
6 W	0227	-0.5	-15	21 Th	0221	-1.7	-52
	0853	3.6	110		0851	4.1	125
	1321	2.2	67		1326	2.0	61
	1942	6.2	189		1948	7.6	232
7 Th	0302	-0.7	-21	22 F	0307	-2.0	-61
	0931	3.6	110		0939	4.3	131
	1353	2.3	70		1415	2.0	61
	2013	6.3	192		2034	7.6	232
8 F	0334	-0.7	-21	23 Sa	0353	-2.0	-61
	1006	3.6	110		1025	4.4	134
	1422	2.4	73		1507	2.0	61
	2044	6.3	192		2123	7.4	226
9 Sa	0409	-0.7	-21	24 Su	0438	-1.8	-55
	1045	3.6	110		1111	4.4	134
	1453	2.4	73		1558	2.0	61
	2116	6.2	189		2211	7.0	213
10 Su	0441	-0.7	-21	25 M	0523	-1.4	-43
	1123	3.6	110		1159	4.5	137
	1529	2.5	76		1654	2.1	64
	2148	6.1	186		2257	6.3	192
11 M	0520	-0.6	-18	26 Tu	0603	-0.9	-27
	1203	3.6	110		1245	4.6	140
	1611	2.6	79		1754	2.2	67
	2227	5.8	177		2349	5.5	168
12 Tu	0555	-0.4	-12	27 W	0646	-0.2	-6
	1245	3.7	113		1334	4.7	143
	1701	2.7	82		1908	2.3	70
	2307	5.4	165				
13 W	0634	-0.1	-3	28 Th	0042	4.7	143
	1333	3.9	119		0727	0.4	12
	1811	2.8	85		1426	4.9	149
	2357	4.9	149		2028	2.2	67
14 Th	0717	0.2	6	29 F	0152	3.9	119
	1419	4.3	131		0809	1.1	34
	1937	2.6	79		1513	5.0	152
					2201	1.9	58
15 F	0106	4.3	131	30 Sa	0320	3.3	101
	0759	0.6	18		0858	1.6	49
	1501	4.7	143		1603	5.2	158
	2113	2.1	64		2317	1.4	43

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN DIEGO, CALIFORNIA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0508	3.1	94	16 M	0415	3.2	98
	0950	2.1	64		0854	2.1	64
	1649	5.4	165		1556	6.1	186
					2336	0.3	9
2 M	0019	0.8	24	17 Tu	0601	3.3	101
	0633	3.2	98		1010	2.4	73
	1044	2.4	73		1700	6.5	198
	1732	5.7	174				
3 Tu	0103	0.3	9	18 W	0035	-0.5	-15
	0734	3.4	104		0710	3.7	113
	1138	2.6	79		1123	2.5	76
	1814	5.9	180		1759	7.0	213
4 W	0142	-0.1	-3	19 Th	0128	-1.1	-34
	0816	3.6	110		0803	4.1	125
	1222	2.6	79		1228	2.3	70
	1849	6.2	189		1852	7.3	223
5 Th	0218	-0.4	-12	20 F	0213	-1.5	-46
	0851	3.7	113		0845	4.4	134
	1303	2.6	79		1323	2.1	64
	1925	6.4	195		1943	7.6	232
6 F	0250	-0.6	-18	21 Sa	0256	-1.7	-52
	0923	3.8	116		0924	4.6	140
	1342	2.5	76		1416	1.9	58
	2000	6.5	198		2029	7.6	232
7 Sa	0319	-0.8	-24	22 Su	0335	-1.6	-49
	0951	3.9	119		1000	4.8	146
	1417	2.4	73		1505	1.7	52
	2032	6.6	201		2114	7.3	223
8 Su	0350	-0.8	-24	23 M	0414	-1.3	-40
	1020	4.0	122		1038	5.0	152
	1453	2.4	73		1551	1.6	49
	2107	6.6	201		2156	6.8	207
9 M	0420	-0.8	-24	24 Tu	0446	-0.9	-27
	1051	4.2	128		1114	5.1	155
	1529	2.3	70		1638	1.7	52
	2139	6.4	195		2238	6.1	186
10 Tu	0449	-0.6	-18	25 W	0518	-0.3	-9
	1120	4.3	131		1149	5.2	158
	1614	2.3	70		1730	1.8	55
	2215	6.1	186		2320	5.3	162
11 W	0520	-0.4	-12	26 Th	0551	0.4	12
	1152	4.5	137		1224	5.2	158
	1701	2.2	67		1826	1.9	58
	2256	5.6	171				
12 Th	0549	0.0	0	27 F	0004	4.5	137
	1227	4.7	143		0624	1.1	34
	1801	2.2	67		1306	5.1	155
	2342	4.9	149		1935	2.0	61
13 F	0624	0.5	15	28 Sa	0101	3.7	113
	1310	5.0	152		0650	1.7	52
	1914	2.0	61		1352	5.1	155
					2105	1.9	58
14 Sa	0045	4.2	128	29 Su	0235	3.1	94
	0703	1.1	34		0725	2.3	70
	1358	5.3	162		1447	5.1	155
	2048	1.7	52		2248	1.5	46
15 Su	0216	3.5	107	30 M	0513	2.9	88
	0749	1.6	49		0817	2.8	85
	1454	5.7	174		1553	5.2	158
	2220	1.1	34		2358	1.1	34
				31 Tu	0659	3.2	98
					0953	3.0	91
					1653	5.4	165

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0046	0.6	18	16 Th	0030	-0.5	-15
	0740	3.5	107		0713	4.1	125
	1116	3.0	91		1137	2.7	82
	1748	5.7	174		1757	6.8	207
2 Th	0124	0.1	3	17 F	0117	-0.9	-27
	0806	3.8	116		0750	4.5	137
	1214	2.9	88		1237	2.3	70
	1831	6.1	186		1849	7.1	216
3 F	0156	-0.2	-6	18 Sa	0157	-1.2	-37
	0832	4.0	122		0823	4.9	149
	1257	2.6	79		1329	1.8	55
	1909	6.4	195		1938	7.2	219
4 Sa	0226	-0.5	-15	19 Su	0234	-1.2	-37
	0854	4.2	128		0855	5.2	158
	1334	2.4	73		1414	1.4	43
	1945	6.6	201		2020	7.1	216
5 Su	0252	-0.6	-18	20 M	0308	-1.0	-30
	0916	4.4	134		0924	5.4	165
	1411	2.1	64		1455	1.2	37
	2020	6.7	204		2100	6.8	207
6 M	0320	-0.7	-21	21 Tu	0337	-0.6	-18
	0941	4.7	143		0956	5.6	171
	1446	1.9	58		1537	1.0	30
	2052	6.7	204		2137	6.3	192
7 Tu	0345	-0.6	-18	22 W	0406	-0.1	-3
	1006	4.9	149		1021	5.7	174
	1524	1.6	49		1616	1.0	30
	2127	6.4	195		2216	5.6	171
8 W	0411	-0.4	-12	23 Th	0431	0.5	15
	1030	5.2	158		1049	5.7	174
	1605	1.5	46		1702	1.1	34
	2206	6.0	183		2254	4.9	149
9 Th	0439	0.0	0	24 F	0454	1.1	34
	1100	5.4	165		1118	5.6	171
	1654	1.4	43		1744	1.3	40
	2249	5.4	165		2334	4.2	128
10 F	0507	0.5	15	25 Sa	0515	1.7	52
	1134	5.6	171		1149	5.4	165
	1747	1.3	40		1843	1.5	46
	2339	4.6	140				
11 Sa	0539	1.1	34	26 Su	0029	3.5	107
	1213	5.7	174		0533	2.2	67
	1900	1.3	40		1227	5.2	158
					1959	1.7	52
12 Su	0045	3.8	116	27 M	0204	3.0	91
	0611	1.7	52		0541	2.7	82
	1304	5.8	177		1317	5.0	152
	2026	1.1	34		2155	1.6	49
13 M	0230	3.2	98	28 Tu	1444	4.9	149
	0700	2.3	70		2324	1.2	37
	1410	5.9	180				
	2209	0.7	21				
14 Tu	0455	3.2	98	29 W	0718	3.5	107
	0823	2.8	85		0921	3.4	104
	1533	6.0	183		1615	5.1	155
	2329	0.1	3				
15 W	0630	3.6	110	30 Th	0014	0.7	21
	1015	3.0	91		0720	3.8	116
	1651	6.4	195		1111	3.2	98
					1721	5.4	165
				31 F	0051	0.3	9
					0734	4.1	125
					1204	2.9	88
					1808	5.8	177

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0120	0.0	0	16 Su	0129	-0.6	-18
	0750	4.4	134		0751	5.4	165
	1243	2.4	73		1329	1.2	37
	1847	6.2	189		1929	6.5	198
2 Su	0148	-0.3	-9	17 M	0202	-0.5	-15
	0811	4.7	143		0819	5.8	177
	1321	1.9	58		1408	0.8	24
	1926	6.4	195		2011	6.3	192
3 M	0213	-0.4	-12	18 Tu	0230	-0.2	-6
	0830	5.1	155		0845	6.0	183
	1357	1.5	46		1447	0.5	15
	2001	6.5	198		2047	5.9	180
4 Tu	0239	-0.4	-12	19 W	0255	0.3	9
	0853	5.4	165		0909	6.1	186
	1433	1.0	30		1522	0.4	12
	2038	6.4	195		2125	5.5	168
5 W	0305	-0.2	-6	20 Th	0320	0.7	21
	0917	5.8	177		0932	6.1	186
	1512	0.7	21		1556	0.4	12
	2118	6.1	186		2201	5.0	152
6 Th	0332	0.2	6	21 F	0342	1.2	37
	0945	6.1	186		0956	6.1	186
	1554	0.4	12		1633	0.5	15
	2200	5.6	171		2237	4.4	134
7 F	0359	0.6	18	22 Sa	0401	1.7	52
	1014	6.3	192		1021	5.9	180
	1643	0.3	9		1715	0.7	21
	2246	5.0	152		2319	3.9	119
8 Sa	0428	1.2	37	23 Su	0417	2.2	67
	1049	6.3	192		1046	5.7	174
	1738	0.4	12		1800	1.0	30
	2342	4.2	128				
9 Su	0459	1.8	55	24 M	0013	3.3	101
	1133	6.2	189		0430	2.6	79
	1847	0.5	15		1118	5.4	165
					1909	1.3	40
10 M	0100	3.6	110	25 Tu	0212	3.0	91
	0536	2.4	73		0412	2.9	88
	1226	6.0	183		1203	5.0	152
	2017	0.6	18		2049	1.4	43
11 Tu	0313	3.3	101	26 W	1325	4.7	143
	0632	3.0	91		2224	1.1	34
	1346	5.8	177				
	2159	0.4	12				
12 W	0523	3.6	110	27 Th	0656	3.7	113
	0842	3.3	101		0902	3.6	110
	1523	5.8	177		1518	4.7	143
	2314	0.0	0		2321	0.8	24
13 Th	0615	4.1	125	28 F	0634	4.0	122
	1040	3.0	91		1055	3.3	101
	1649	6.0	183		1640	5.0	152
					2359	0.5	15
14 F	0009	-0.4	-12	29 Sa	0645	4.3	131
	0651	4.6	140		1146	2.7	82
	1151	2.4	73		1737	5.3	162
	1751	6.3	192				
15 Sa	0054	-0.6	-18	30 Su	0031	0.2	6
	0723	5.0	152		0702	4.8	146
	1244	1.8	55		1228	2.0	61
	1844	6.5	198		1821	5.6	171

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0057	0.1	3	16	0123	0.4	12
M	0719	5.2	158	Tu	0740	6.2	189
	1305	1.3	40		1359	0.3	9
	1903	5.8	177		2001	5.2	158
2	0126	0.1	3	17	0151	0.7	21
Tu	0742	5.7	174	W	0805	6.4	195
	1342	0.7	21		1435	0.0	0
	1942	5.9	180		2041	5.0	152
3	0154	0.2	6	18	0213	1.1	34
W	0806	6.2	189	Th	0827	6.4	195
	1421	0.1	3		1507	-0.2	-6
	2025	5.8	177		2116	4.7	143
4	0223	0.5	15	19	0238	1.5	46
Th	0833	6.6	201	F	0851	6.4	195
	1500	-0.4	-12		1542	-0.2	-6
	2111	5.5	168		2151	4.3	131
5	0251	0.8	24	20	0257	1.8	55
F	0905	6.9	210	Sa	0914	6.3	192
	1545	-0.7	-21		1614	-0.1	-3
	2200	5.0	152		2230	4.0	122
6	0323	1.3	40	21	0319	2.2	67
Sa	0939	7.0	213	Su	0939	6.1	186
	1634	-0.7	-21		1656	0.2	6
	2253	4.5	137		2315	3.6	110
7	0356	1.8	55	22	0336	2.5	76
Su	1019	6.9	210	M	1006	5.9	180
	1733	-0.5	-15		1738	0.4	12
	2357	3.9	119				
8	0430	2.3	70	23	0016	3.3	101
M	1104	6.6	201	Tu	0351	2.8	85
	1842	-0.2	-6		1037	5.6	171
					1833	0.7	21
9	0127	3.5	107	24	1119	5.2	158
Tu	0523	2.8	85	W	1946	0.9	27
	1205	6.1	186				
	2005	0.0	0				
10	0331	3.6	110	25	1224	4.8	146
W	0653	3.3	101	Th	2104	0.9	27
	1329	5.6	171				
	2130	0.0	0				
11	0454	4.1	125	26	0526	3.7	113
Th	0912	3.2	98	F	0816	3.6	110
	1511	5.4	165		1405	4.5	137
	2243	-0.1	-3		2207	0.8	24
12	0540	4.6	140	27	0528	4.1	125
F	1048	2.7	82	Sa	1019	3.2	98
	1634	5.4	165		1541	4.5	137
	2337	-0.1	-3		2253	0.7	21
13	0617	5.1	155	28	0545	4.6	140
Sa	1153	2.0	61	Su	1121	2.4	73
	1740	5.5	168		1653	4.6	140
					2329	0.6	18
14	0015	-0.1	-3	29	0604	5.1	155
Su	0646	5.5	168	M	1205	1.6	49
	1241	1.3	40		1753	4.8	146
	1835	5.5	168				
15	0051	0.1	3	30	0005	0.6	18
M	0715	5.9	180	Tu	0628	5.7	174
	1323	0.7	21		1247	0.8	24
	1920	5.4	165		1843	5.0	152
				31	0037	0.7	21
				W	0654	6.3	192
					1327	-0.1	-3
					1932	5.0	152

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0110	0.9	27	16	0137	1.8	55
Th	0726	6.8	207	F	0756	6.5	198
	1409	-0.8	-24		1458	-0.5	-15
	2021	5.0	152		2117	4.1	125
2	0144	1.1	34	17	0203	2.1	64
F	0758	7.2	219	Sa	0821	6.5	198
	1455	-1.3	-40		1530	-0.5	-15
	2111	4.8	146		2155	3.9	119
3	0219	1.4	43	18	0227	2.3	70
Sa	0837	7.5	229	Su	0847	6.4	195
	1540	-1.5	-46		1605	-0.5	-15
	2201	4.5	137		2233	3.7	113
4	0256	1.8	55	19	0252	2.4	73
Su	0916	7.5	229	M	0915	6.3	192
	1632	-1.5	-46		1641	-0.3	-9
	2301	4.2	128		2320	3.5	107
5	0337	2.1	64	20	0321	2.6	79
M	1001	7.2	219	Tu	0947	6.1	186
	1728	-1.2	-37		1720	-0.1	-3
6	0007	3.9	119	21	0009	3.4	104
Tu	0429	2.5	76	W	0349	2.8	85
	1054	6.8	207		1019	5.8	177
	1829	-0.8	-24		1805	0.1	3
7	0129	3.8	116	22	0111	3.4	104
W	0531	2.9	88	Th	0425	3.1	94
	1155	6.1	186		1057	5.4	165
	1939	-0.4	-12		1855	0.4	12
8	0252	4.0	122	23	0220	3.5	107
Th	0707	3.1	94	F	0534	3.3	101
	1309	5.5	168		1149	4.9	149
	2048	-0.1	-3		1944	0.6	18
9	0401	4.4	134	24	0319	3.8	116
F	0907	2.9	88	Sa	0725	3.3	101
	1442	4.9	149		1259	4.4	134
	2155	0.1	3		2041	0.7	21
10	0452	4.9	149	25	0401	4.2	128
Sa	1038	2.3	70	Su	0924	2.9	88
	1611	4.7	143		1431	4.1	125
	2248	0.4	12		2131	0.9	27
11	0532	5.4	165	26	0433	4.8	146
Su	1145	1.5	46	M	1047	2.1	64
	1724	4.5	137		1608	3.9	119
	2330	0.6	18		2220	1.1	34
12	0606	5.8	177	27	0505	5.4	165
M	1233	0.9	27	Tu	1141	1.2	37
	1826	4.5	137		1729	4.0	122
					2305	1.2	37
13	0009	0.9	27	28	0540	6.0	183
Tu	0636	6.1	186	W	1230	0.3	9
	1315	0.3	9		1833	4.1	125
	1915	4.4	134		2348	1.4	43
14	0043	1.3	40	29	0616	6.6	201
W	0703	6.3	192	Th	1315	-0.6	-18
	1351	-0.1	-3		1929	4.2	128
	1958	4.3	131				
15	0110	1.6	49	30	0033	1.6	49
Th	0730	6.5	198	F	0655	7.2	219
	1426	-0.4	-12		1403	-1.3	-40
	2040	4.2	128		2025	4.3	131

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0115	1.7	52	16	0147	2.3	70
Sa	0737	7.6	232	Su	0806	6.5	198
	1449	-1.8	-55		1525	-0.8	-24
	2115	4.4	134		2157	3.8	116
2	0200	1.8	55	17	0219	2.4	73
Su	0820	7.8	238	M	0835	6.5	198
	1537	-2.0	-61		1556	-0.8	-24
	2207	4.3	131		2229	3.8	116
3	0246	1.9	58	18	0248	2.4	73
M	0905	7.7	235	Tu	0906	6.4	195
	1625	-1.9	-58		1630	-0.7	-21
	2259	4.2	128		2301	3.8	116
4	0334	2.1	64	19	0322	2.5	76
Tu	0953	7.4	226	W	0938	6.2	189
	1715	-1.6	-49		1659	-0.5	-15
	2355	4.2	128		2336	3.8	116
5	0430	2.3	70	20	0357	2.6	79
W	1044	6.8	207	Th	1010	5.9	180
	1808	-1.2	-37		1731	-0.3	-9
6	0053	4.2	128	21	0015	3.8	116
Th	0536	2.5	76	F	0440	2.7	82
	1141	6.1	186		1045	5.5	168
	1901	-0.6	-18		1803	0.0	0
7	0159	4.4	134	22	0054	4.0	122
F	0658	2.6	79	Sa	0539	2.7	82
	1247	5.2	158		1125	5.0	152
	1956	0.0	0		1840	0.3	9
8	0259	4.7	143	23	0138	4.2	128
Sa	0836	2.5	76	Su	0653	2.7	82
	1403	4.4	134		1221	4.4	134
	2052	0.5	15		1921	0.7	21
9	0351	5.0	152	24	0226	4.6	140
Su	1010	2.0	61	M	0830	2.4	73
	1536	3.9	119		1342	3.7	113
	2145	1.0	30		2008	1.2	37
10	0440	5.4	165	25	0313	5.0	152
M	1126	1.3	40	Tu	1006	1.7	52
	1705	3.6	110		1530	3.3	101
	2237	1.5	46		2103	1.6	49
11	0522	5.7	174	26	0405	5.5	168
Tu	1225	0.7	21	W	1122	0.9	27
	1822	3.6	110		1719	3.3	101
	2322	1.8	55		2207	1.9	58
12	0601	6.0	183	27	0458	6.1	186
W	1307	0.2	6	Th	1221	-0.1	-3
	1921	3.7	113		1839	3.5	107
					2309	2.1	64
13	0004	2.0	61	28	0548	6.7	204
Th	0631	6.2	189	F	1313	-0.9	-27
	1345	-0.2	-6		1939	3.8	116
	2008	3.7	113				
14	0043	2.2	67	29	0009	2.1	64
F	0705	6.3	192	Sa	0638	7.2	219
	1421	-0.5	-15		1359	-1.6	-49
	2048	3.8	116		2029	4.1	125
15	0115	2.3	70	30	0103	2.0	61
Sa	0736	6.4	195	Su	0726	7.6	232
	1453	-0.7	-21		1446	-2.0	-61
	2121	3.8	116		2113	4.3	131
				31	0155	1.9	58
				M	0814	7.8	238
					1529	-2.2	-67
					2158	4.4	134

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

LOS ANGELES (Outer Harbor), CALIFORNIA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0024	4.1	125	16 Tu	0048	4.4	134
	0518	2.4	73		0640	2.1	64
	1108	5.1	155		1207	3.9	119
	1812	0.0	0		1833	1.0	30
2 Tu	0101	4.3	131	17 W	0130	4.5	137
	0629	2.3	70		0800	2.0	61
	1203	4.4	134		1309	3.1	94
	1853	0.5	15		1904	1.6	49
3 W	0148	4.6	140	18 Th	0216	4.5	137
	0802	2.0	61		0946	1.8	55
	1322	3.6	110		1505	2.6	79
	1935	1.1	34		1933	2.1	64
4 Th	0239	5.0	152	19 F	0312	4.6	140
	0939	1.5	46		1116	1.3	40
	1511	3.1	94		1758	2.6	79
	2030	1.6	49		2028	2.5	76
5 F	0335	5.4	165	20 Sa	0412	4.8	146
	1106	0.7	21		1215	0.8	24
	1709	3.0	91		1921	2.9	88
	2136	2.1	64		2204	2.8	85
6 Sa	0431	5.8	177	21 Su	0505	5.0	152
	1207	-0.1	-3		1257	0.3	9
	1837	3.2	98		1959	3.2	98
	2245	2.3	70		2321	2.8	85
7 Su	0526	6.2	189	22 M	0553	5.3	162
	1300	-0.8	-24		1332	-0.2	-6
	1939	3.5	107		2021	3.4	104
	2351	2.3	70				
8 M	0618	6.6	201	23 Tu	0014	2.7	82
	1348	-1.3	-40		0635	5.7	174
	2027	3.8	116		1403	-0.5	-15
					2043	3.6	110
9 Tu	0046	2.3	70	24 W	0055	2.5	76
	0707	6.8	207		0710	6.0	183
	1433	-1.6	-49		1433	-0.8	-24
	2107	4.0	122		2105	3.7	113
10 W	0139	2.1	64	25 Th	0134	2.2	67
	0754	6.9	210		0746	6.2	189
	1512	-1.6	-49		1500	-1.0	-30
	2145	4.1	125		2130	3.9	119
11 Th	0225	2.0	61	26 F	0212	2.0	61
	0836	6.8	207		0821	6.3	192
	1551	-1.5	-46		1529	-1.0	-30
	2221	4.2	128		2155	4.1	125
12 F	0310	1.9	58	27 Sa	0251	1.8	55
	0918	6.5	198		0859	6.2	189
	1627	-1.2	-37		1558	-1.0	-30
	2259	4.3	131		2224	4.3	131
13 Sa	0357	1.9	58	28 Su	0332	1.6	49
	1000	6.0	183		0938	6.0	183
	1701	-0.7	-21		1630	-0.7	-21
	2335	4.4	134		2254	4.6	140
14 Su	0446	1.9	58	29 M	0421	1.4	43
	1042	5.4	165		1017	5.5	168
	1733	-0.2	-6		1659	-0.3	-9
					2326	4.8	146
15 M	0010	4.4	134	30 Tu	0512	1.4	43
	0538	2.0	61		1106	4.8	146
	1121	4.6	140		1731	0.3	9
	1804	0.4	12				
				31 W	0002	5.0	152
					0618	1.3	40
					1202	4.0	122
					1803	0.9	27

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0048	5.1	155	16 F	0040	4.5	137
	0738	1.2	37		0827	1.5	46
	1319	3.2	98		1421	2.4	73
	1842	1.6	49		1730	2.3	70
2 F	0143	5.2	158	17 Sa	0133	4.4	134
	0921	0.9	27		1028	1.3	40
	1533	2.7	82				
	1927	2.2	67				
3 Sa	0253	5.3	162	18 Su	0300	4.4	134
	1057	0.3	9		1146	0.8	24
	1758	2.9	88				
	2100	2.6	79				
4 Su	0410	5.5	168	19 M	0424	4.6	140
	1206	-0.3	-9		1231	0.3	9
	1906	3.3	101		1948	3.2	98
	2247	2.7	82		2308	2.9	88
5 M	0519	5.9	180	20 Tu	0527	5.0	152
	1259	-0.8	-24		1304	-0.1	-3
	1948	3.6	110		1953	3.5	107
6 Tu	0002	2.4	73	21 W	0006	2.6	79
	0618	6.2	189		0614	5.4	165
	1341	-1.2	-37		1332	-0.5	-15
	2020	3.9	119		2007	3.7	113
7 W	0056	2.1	64	22 Th	0047	2.2	67
	0707	6.4	195		0651	5.7	174
	1419	-1.3	-40		1401	-0.7	-21
	2048	4.2	128		2026	4.0	122
8 Th	0142	1.7	52	23 F	0124	1.7	52
	0749	6.4	195		0733	6.0	183
	1452	-1.3	-40		1426	-0.9	-27
	2117	4.4	134		2048	4.4	134
9 F	0225	1.5	46	24 Sa	0203	1.3	40
	0831	6.3	192		0809	6.0	183
	1524	-1.1	-34		1455	-0.8	-24
	2145	4.6	140		2109	4.7	143
10 Sa	0303	1.3	40	25 Su	0244	0.8	24
	0907	6.0	183		0847	5.9	180
	1552	-0.7	-21		1523	-0.6	-18
	2213	4.7	143		2137	5.0	152
11 Su	0345	1.2	37	26 M	0326	0.5	15
	0945	5.5	168		0930	5.6	171
	1617	-0.3	-9		1548	-0.3	-9
	2239	4.7	143		2206	5.3	162
12 M	0424	1.2	37	27 Tu	0412	0.3	9
	1017	4.9	149		1015	5.0	152
	1643	0.2	6		1620	0.2	6
	2307	4.7	143		2240	5.5	168
13 Tu	0506	1.2	37	28 W	0504	0.2	6
	1056	4.3	131		1107	4.3	131
	1704	0.8	24		1652	0.8	24
	2335	4.7	143		2317	5.5	168
14 W	0555	1.3	40				
	1135	3.6	110				
	1723	1.3	40				
15 Th	0003	4.6	140				
	0653	1.5	46				
	1228	2.9	88				
	1736	1.8	55				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0606	0.3	9	16 F	0611	0.8	24
	1210	3.5	107		1218	2.8	85
	1724	1.5	46		1633	2.1	64
					2330	4.6	140
2 F	0003	5.4	165	17 Sa	0724	1.1	34
	0725	0.4	12				
	1343	2.9	88				
	1759	2.1	64				
3 Sa	0103	5.2	158	18 Su	0013	4.4	134
	0905	0.3	9		0917	1.0	30
	1625	2.8	85				
	1903	2.6	79				
4 Su	0223	5.1	155	19 M	0139	4.2	128
	1041	0.0	0		1050	0.7	21
	1812	3.2	98				
	2125	2.9	88				
5 M	0358	5.1	155	20 Tu	0332	4.2	128
	1150	-0.4	-12		1140	0.4	12
	1852	3.6	110		1902	3.4	104
	2311	2.6	79		2256	2.8	85
6 Tu	0515	5.4	165	21 W	0449	4.5	137
	1238	-0.7	-21		1215	0.0	0
	1922	3.9	119		1905	3.7	113
					2350	2.3	70
7 W	0014	2.1	64	22 Th	0540	4.9	149
	0614	5.6	171		1247	-0.3	-9
	1320	-0.8	-24		1918	4.0	122
	1951	4.3	131				
8 Th	0102	1.6	49	23 F	0031	1.7	52
	0702	5.7	174		0627	5.2	158
	1352	-0.8	-24		1315	-0.4	-12
	2016	4.5	137		1936	4.5	137
9 F	0143	1.2	37	24 Sa	0110	1.1	34
	0744	5.7	174		0712	5.4	165
	1421	-0.7	-21		1341	-0.4	-12
	2039	4.8	146		1958	4.9	149
10 Sa	0218	0.8	24	25 Su	0152	0.4	12
	0820	5.5	168		0757	5.4	165
	1449	-0.4	-12		1413	-0.3	-9
	2102	4.9	149		2023	5.4	165
11 Su	0254	0.6	18	26 M	0234	-0.2	-6
	0854	5.2	158		0842	5.3	162
	1511	0.0	0		1442	0.0	0
	2124	5.0	152		2052	5.8	177
12 M	0329	0.4	12	27 Tu	0318	-0.6	-18
	0929	4.8	146		0927	4.9	149
	1533	0.4	12		1513	0.4	12
	2146	5.1	155		2124	6.0	183
13 Tu	0401	0.4	12	28 W	0406	-0.8	-24
	1003	4.4	134		1017	4.4	134
	1553	0.8	24		1545	0.9	27
	2208	5.1	155		2203	6.1	186
14 W	0440	0.5	15	29 Th	0459	-0.8	-24
	1040	3.8	116		1117	3.8	116
	1612	1.3	40		1620	1.5	46
	2230	5.0	152		2242	5.9	180
15 Th	0519	0.6	18	30 F	0600	-0.6	-18
	1121	3.3	101		1230	3.3	101
	1627	1.7	52		1659	2.0	61
	2257	4.8	146		2331	5.6	171
				31 Sa	0717	-0.3	-9
					1417	3.0	91
					1747	2.5	76

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0037	5.2	158	16 M	0807	0.6	18
	0843	-0.2	-6				
	1627	3.1	94				
	1930	2.9	88				
2 M	0206	4.8	146	17 Tu	0040	4.2	128
	1010	-0.2	-6		0927	0.5	15
	1738	3.5	107		1751	3.3	101
	2154	2.7	82		2033	3.1	94
3 Tu	0343	4.7	143	18 W	0223	4.1	125
	1113	-0.3	-9		1027	0.4	12
	1811	3.9	119		1745	3.6	110
	2316	2.2	67		2228	2.7	82
4 W	0505	4.8	146	19 Th	0359	4.1	125
	1206	-0.4	-12		1109	0.2	6
	1843	4.3	131		1759	4.0	122
					2326	2.0	61
5 Th	0014	1.6	49	20 F	0506	4.3	131
	0601	4.9	149		1148	0.2	6
	1243	-0.3	-9		1819	4.5	137
	1911	4.6	140				
6 F	0057	1.1	34	21 Sa	0011	1.2	37
	0651	4.9	149		0604	4.5	137
	1315	-0.1	-3		1220	0.2	6
	1936	4.9	149		1843	5.0	152
7 Sa	0135	0.6	18	22 Su	0056	0.4	12
	0732	4.8	146		0656	4.6	140
	1341	0.2	6		1254	0.3	9
	1955	5.1	155		1909	5.6	171
8 Su	0208	0.3	9	23 M	0138	-0.3	-9
	0810	4.6	140		0745	4.6	140
	1404	0.5	15		1328	0.5	15
	2017	5.3	162		1941	6.1	186
9 M	0242	0.0	0	24 Tu	0224	-1.0	-30
	0846	4.4	134		0837	4.5	137
	1427	0.8	24		1402	0.9	27
	2036	5.4	165		2016	6.4	195
10 Tu	0314	-0.1	-3	25 W	0309	-1.4	-43
	0921	4.1	125		0931	4.3	131
	1449	1.2	37		1440	1.2	37
	2100	5.4	165		2053	6.6	201
11 W	0346	-0.2	-6	26 Th	0358	-1.5	-46
	0958	3.8	116		1027	3.9	119
	1508	1.5	46		1516	1.6	49
	2119	5.4	165		2135	6.5	198
12 Th	0422	-0.1	-3	27 F	0453	-1.4	-43
	1037	3.4	104		1131	3.6	110
	1529	1.8	55		1601	2.0	61
	2148	5.2	158		2222	6.2	189
13 F	0503	0.1	3	28 Sa	0555	-1.2	-37
	1125	3.1	94		1245	3.4	104
	1545	2.1	64		1653	2.4	73
	2213	5.0	152		2318	5.8	177
14 Sa	0549	0.3	9	29 Su	0701	-0.8	-24
	1232	2.8	85		1415	3.4	104
	1552	2.4	73		1803	2.7	82
	2246	4.8	146				
15 Su	0648	0.5	15	30 M	0021	5.2	158
	2331	4.5	137		0815	-0.5	-15
					1539	3.6	110
					1955	2.8	85

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0147	4.7	143	16 W	0012	4.4	134
	0925	-0.2	-6		0815	0.3	9
	1639	4.0	122		1554	3.6	110
	2147	2.5	76		2011	3.0	91
2 W	0320	4.3	131	17 Th	0133	4.0	122
	1025	0.0	0		0907	0.4	12
	1721	4.3	131		1626	3.9	119
	2304	1.9	58		2154	2.5	76
3 Th	0436	4.1	125	18 F	0306	3.8	116
	1112	0.2	6		0957	0.6	18
	1754	4.7	143		1651	4.4	134
					2300	1.7	52
4 F	0001	1.3	40	19 Sa	0432	3.7	113
	0542	4.1	125		1041	0.7	21
	1154	0.5	15		1721	5.0	152
	1825	5.0	152		2353	0.8	24
5 Sa	0047	0.8	24	20 Su	0542	3.8	116
	0638	4.0	122		1123	0.9	27
	1226	0.8	24		1753	5.6	171
	1849	5.2	158				
6 Su	0126	0.3	9	21 M	0041	-0.1	-3
	0724	3.9	119		0646	3.9	119
	1255	1.1	34		1205	1.2	37
	1912	5.4	165		1828	6.1	186
7 M	0158	0.0	0	22 Tu	0129	-0.8	-24
	0805	3.8	116		0746	3.9	119
	1320	1.4	43		1247	1.4	43
	1936	5.5	168		1908	6.6	201
8 Tu	0230	-0.3	-9	23 W	0218	-1.4	-43
	0844	3.7	113		0841	3.9	119
	1345	1.6	49		1329	1.6	49
	1958	5.6	171		1949	6.9	210
9 W	0305	-0.5	-15	24 Th	0304	-1.8	-55
	0925	3.5	107		0937	3.9	119
	1407	1.9	58		1411	1.8	55
	2023	5.7	174		2033	7.0	213
10 Th	0337	-0.5	-15	25 F	0356	-1.9	-58
	1007	3.4	104		1032	3.8	116
	1432	2.1	64		1500	2.0	61
	2049	5.6	171		2119	6.8	207
11 F	0413	-0.4	-12	26 Sa	0448	-1.7	-52
	1048	3.2	98		1131	3.7	113
	1457	2.3	70		1553	2.3	70
	2121	5.5	168		2211	6.4	195
12 Sa	0451	-0.3	-9	27 Su	0541	-1.4	-43
	1139	3.1	94		1237	3.7	113
	1522	2.5	76		1653	2.5	76
	2151	5.3	162		2304	5.9	180
13 Su	0536	-0.2	-6	28 M	0637	-1.0	-30
	1240	3.0	91		1338	3.8	116
	1548	2.7	82		1810	2.6	79
	2227	5.1	155				
14 M	0626	0.0	0	29 Tu	0003	5.2	158
	1403	3.0	91		0733	-0.5	-15
	1633	2.9	88		1441	4.0	122
	2312	4.8	146		1941	2.6	79
15 Tu	0718	0.2	6	30 W	0116	4.5	137
	1512	3.2	98		0828	0.0	0
	1803	3.1	94		1537	4.3	131
					2119	2.3	70
				31 Th	0238	3.9	119
					0923	0.5	15
					1622	4.6	140
					2240	1.8	55

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0402	3.5	107	16 Sa	0229	3.5	107
	1009	0.9	27		0847	1.0	30
	1701	4.9	149		1547	4.9	149
	2343	1.2	37		2236	1.4	43
2 Sa	0523	3.4	104	17 Su	0411	3.3	101
	1055	1.3	40		0938	1.4	43
	1733	5.2	158		1629	5.5	168
					2340	0.5	15
3 Su	0033	0.7	21	18 M	0540	3.3	101
	0629	3.3	101		1031	1.7	52
	1130	1.7	52		1713	6.0	183
	1804	5.4	165				
4 M	0115	0.2	6	19 Tu	0035	-0.3	-9
	0724	3.3	101		0654	3.4	104
	1206	1.9	58		1126	2.0	61
	1833	5.6	171		1801	6.5	198
5 Tu	0150	-0.1	-3	20 W	0124	-1.0	-30
	0810	3.4	104		0755	3.6	110
	1237	2.1	64		1218	2.1	64
	1902	5.7	174		1847	6.9	210
6 W	0222	-0.4	-12	21 Th	0213	-1.5	-46
	0854	3.4	104		0849	3.8	116
	1309	2.3	70		1311	2.1	64
	1931	5.8	177		1936	7.1	216
7 Th	0254	-0.5	-15	22 F	0302	-1.8	-55
	0933	3.4	104		0938	3.9	119
	1341	2.4	73		1403	2.1	64
	2003	5.9	180		2022	7.1	216
8 F	0329	-0.6	-18	23 Sa	0348	-1.8	-55
	1011	3.4	104		1027	4.0	122
	1409	2.5	76		1456	2.1	64
	2033	5.9	180		2112	6.9	210
9 Sa	0404	-0.6	-18	24 Su	0433	-1.6	-49
	1047	3.4	104		1112	4.1	125
	1445	2.5	76		1550	2.2	67
	2107	5.8	177		2200	6.5	198
10 Su	0440	-0.6	-18	25 M	0517	-1.2	-37
	1129	3.4	104		1200	4.2	128
	1523	2.6	79		1646	2.2	67
	2142	5.7	174		2248	5.9	180
11 M	0515	-0.5	-15	26 Tu	0602	-0.7	-21
	1213	3.5	107		1248	4.3	131
	1606	2.7	82		1752	2.3	70
	2219	5.4	165		2340	5.2	158
12 Tu	0554	-0.3	-9	27 W	0645	-0.1	-3
	1258	3.6	110		1335	4.5	137
	1702	2.8	85		1907	2.3	70
	2300	5.0	152				
13 W	0633	0.0	0	28 Th	0039	4.4	134
	1339	3.8	116		0725	0.5	15
	1813	2.8	85		1424	4.6	140
	2352	4.5	137		2033	2.2	67
14 Th	0713	0.3	9	29 F	0148	3.6	110
	1421	4.1	125		0807	1.1	34
	1944	2.6	79		1512	4.8	146
					2205	1.8	55
15 F	0101	4.0	122	30 Sa	0325	3.1	94
	0758	0.6	18		0856	1.7	52
	1506	4.5	137		1558	5.0	152
	2115	2.1	64		2321	1.3	40

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

LOS ANGELES (Outer Harbor), CALIFORNIA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height (ft)	Height (cm)
1	0511	3.0	91
Su	0945	2.1	64
	1644	5.2	158
2	0014	0.8	24
M	0636	3.0	91
	1034	2.4	73
	1726	5.4	165
3	0059	0.4	12
Tu	0742	3.2	98
	1126	2.6	79
	1804	5.6	171
4	0138	0.0	0
W	0821	3.4	104
	1212	2.7	82
	1841	5.8	177
5	0213	-0.3	-9
Th	0855	3.5	107
	1251	2.6	79
	1913	6.0	183
6	0245	-0.5	-15
F	0926	3.6	110
	1331	2.6	79
	1949	6.1	186
7	0316	-0.6	-18
Sa	0953	3.7	113
	1408	2.5	76
	2023	6.2	189
8	0347	-0.7	-21
Su	1021	3.8	116
	1445	2.5	76
	2056	6.1	186
9	0416	-0.6	-18
M	1053	3.9	119
	1524	2.4	73
	2131	6.0	183
10	0447	-0.5	-15
Tu	1122	4.1	125
	1609	2.4	73
	2209	5.6	171
11	0516	-0.2	-6
W	1157	4.2	128
	1659	2.4	73
	2251	5.2	158
12	0547	0.1	3
Th	1232	4.5	137
	1800	2.3	70
	2337	4.5	137
13	0620	0.6	18
F	1311	4.7	143
	1916	2.1	64
14	0042	3.8	116
Sa	0658	1.1	34
	1359	5.0	152
	2046	1.7	52
15	0215	3.2	98
Su	0743	1.7	52
	1451	5.3	162
	2219	1.1	34
16	0415	3.0	91
M	0839	2.2	67
	1547	5.7	174
	2333	0.3	9
17	0606	3.1	94
Tu	0955	2.5	76
	1648	6.1	186
18	0033	-0.4	-12
W	0713	3.4	104
	1111	2.6	79
	1747	6.5	198
19	0122	-0.9	-27
Th	0802	3.7	113
	1216	2.5	76
	1840	6.9	210
20	0208	-1.3	-40
F	0844	4.0	122
	1312	2.3	70
	1931	7.1	216
21	0249	-1.5	-46
Sa	0921	4.3	131
	1404	2.1	64
	2016	7.1	216
22	0328	-1.4	-43
Su	0958	4.5	137
	1454	1.9	58
	2103	6.8	207
23	0406	-1.1	-34
M	1033	4.6	140
	1540	1.8	55
	2147	6.4	195
24	0442	-0.7	-21
Tu	1112	4.7	143
	1633	1.8	55
	2229	5.7	174
25	0517	-0.1	-3
W	1147	4.8	146
	1725	1.8	55
	2315	5.0	152
26	0547	0.5	15
Th	1226	4.9	149
	1824	1.9	58
27	0003	4.2	128
F	0619	1.1	34
	1306	4.8	146
	1937	1.9	58
28	0103	3.5	107
Sa	0648	1.8	55
	1353	4.8	146
	2110	1.8	55
29	0249	2.9	88
Su	0723	2.3	70
	1446	4.9	149
	2245	1.5	46
30	0532	2.9	88
M	0815	2.8	85
	1546	5.0	152
	2355	1.0	30
31	0710	3.1	94
Tu	0948	3.0	91
	1649	5.2	158

AUGUST

Day	Time	Height (ft)	Height (cm)
1	0043	0.6	18
W	0743	3.4	104
	1108	3.0	91
	1737	5.4	165
2	0119	0.2	6
Th	0812	3.6	110
	1206	2.9	88
	1822	5.7	174
3	0151	-0.1	-3
F	0830	3.8	116
	1245	2.7	82
	1859	6.0	183
4	0219	-0.4	-12
Sa	0852	4.0	122
	1324	2.5	76
	1936	6.2	189
5	0247	-0.5	-15
Su	0914	4.1	125
	1400	2.2	67
	2011	6.3	192
6	0313	-0.5	-15
M	0939	4.4	134
	1439	2.0	61
	2043	6.2	189
7	0341	-0.4	-12
Tu	1003	4.6	140
	1518	1.8	55
	2120	6.0	183
8	0406	-0.2	-6
W	1029	4.8	146
	1601	1.6	49
	2200	5.6	171
9	0435	0.2	6
Th	1058	5.0	152
	1650	1.5	46
	2242	5.0	152
10	0504	0.7	21
F	1131	5.2	158
	1747	1.4	43
	2335	4.3	131
11	0533	1.2	37
Sa	1213	5.3	162
	1858	1.4	43
12	0044	3.6	110
Su	0605	1.8	55
	1300	5.4	165
	2030	1.2	37
13	0236	3.0	91
M	0648	2.4	73
	1406	5.5	168
	2210	0.8	24
14	0508	3.1	94
Tu	0803	2.8	85
	1524	5.7	174
	2329	0.2	6
15	0636	3.4	104
W	1000	3.0	91
	1639	6.0	183
16	0025	-0.4	-12
Th	0718	3.8	116
	1126	2.8	85
	1745	6.4	195
17	0110	-0.8	-24
F	0750	4.2	128
	1227	2.4	73
	1838	6.6	201
18	0152	-0.9	-27
Sa	0821	4.5	137
	1318	2.0	61
	1927	6.7	204
19	0228	-0.9	-27
Su	0850	4.8	146
	1403	1.6	49
	2011	6.6	201
20	0301	-0.7	-21
M	0919	5.0	152
	1447	1.4	43
	2053	6.4	195
21	0332	-0.4	-12
Tu	0947	5.2	158
	1529	1.2	37
	2132	5.9	180
22	0401	0.1	3
W	1016	5.3	162
	1611	1.2	37
	2211	5.3	162
23	0426	0.6	18
Th	1046	5.3	162
	1653	1.3	40
	2250	4.6	140
24	0451	1.2	37
F	1115	5.2	158
	1744	1.4	43
	2333	4.0	122
25	0510	1.8	55
Sa	1147	5.1	155
	1844	1.6	49
26	0034	3.3	101
Su	0531	2.3	70
	1226	4.9	149
	2007	1.7	52
27	0236	2.9	88
M	0530	2.8	85
	1319	4.7	143
	2200	1.5	46
28	1442	4.7	143
Tu	2321	1.1	34
29	1612	4.8	146
W			
30	0011	0.7	21
Th	0723	3.7	113
	1105	3.2	98
	1714	5.2	158
31	0047	0.4	12
F	0736	3.9	119
	1158	2.9	88
	1800	5.5	168

SEPTEMBER

Day	Time	Height (ft)	Height (cm)
1	0115	0.1	3
Sa	0748	4.1	125
	1238	2.5	76
	1839	5.8	177
2	0141	-0.1	-3
Su	0806	4.4	134
	1314	2.1	64
	1917	6.0	183
3	0206	-0.2	-6
M	0824	4.7	143
	1349	1.6	49
	1952	6.1	186
4	0232	-0.1	-3
Tu	0846	5.1	155
	1425	1.2	37
	2031	6.0	183
5	0300	0.0	0
W	0911	5.4	165
	1506	0.9	27
	2110	5.7	174
6	0325	0.4	12
Th	0940	5.6	171
	1549	0.6	18
	2155	5.2	158
7	0354	0.8	24
F	1014	5.8	177
	1637	0.5	15
	2241	4.6	140
8	0422	1.3	40
Sa	1043	5.9	180
	1736	0.5	15
	2341	3.9	119
9	0454	1.9	58
Su	1125	5.8	177
	1845	0.6	18
10	0106	3.3	101
M	0528	2.5	76
	1221	5.7	174
	2018	0.6	18
11	0330	3.2	98
Tu	0618	3.0	91
	1339	5.5	168
	2157	0.4	12
12	0531	3.5	107
W	0838	3.3	101
	1514	5.5	168
	2311	0.0	0
13	0617	3.9	119
Th	1032	3.0	91
	1637	5.7	174
14	0006	-0.3	-9
F	0651	4.3	131
	1142	2.5	76
	1743	5.9	180
15	0046	-0.4	-12
Sa	0721	4.7	143
	1235	2.0	61
	1835	6.1	186
16	0124	-0.4	-12
Su	0746	5.0	152
	1319	1.5	46
	1920	6.0	183
17	0153	-0.2	-6
M	0811	5.3	162
	1358	1.0	30
	2000	5.9	180
18	0222	0.1	3
Tu	0836	5.5	168
	1437	0.7	21
	2039	5.6	171
19	0250	0.5	15
W	0900	5.7	174
	1513	0.6	18
	2118	5.2	158
20	0312	0.9	27
Th	0923	5.7	174
	1548	0.5	15
	2155	4.7	143
21	0334	1.4	43
F	0948	5.6	171
	1627	0.6	18
	2233	4.2	128
22	0355	1.9	58
Sa	1013	5.5	168
	1709	0.8	24
	2318	3.7	113
23	0414	2.3	70
Su	1040	5.3	162
	1802	1.1	34
24	0024	3.2	98
M	0419	2.7	82
	1110	5.0	152
	1914	1.3	40
25	1200	4.7	143
Tu	2057	1.3	40
26	1324	4.5	137
W	2226	1.1	34
27	0654	3.7	113
Th	0925	3.6	110
	1512	4.5	137
	2319	0.8	24
28	0639	3.9	119
F	1058	3.2	98
	1636	4.7	143
	2356	0.5	15
29	0643	4.2	128
Sa	1145	2.7	82
	1727	5.0	152
30	0027	0.4	12
Su	0657	4.5	137
	1220	2.1	64
	1814	5.3	162

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0052	0.3	9	16 Tu	0115	0.6	18
	0713	4.9	149		0731	5.7	174
	1259	1.5	46		1351	0.5	15
	1855	5.5	168		1954	4.9	149
2 Tu	0118	0.3	9	17 W	0142	1.0	30
	0735	5.3	162		0754	5.9	180
	1336	0.9	27		1429	0.2	6
	1937	5.5	168		2033	4.7	143
3 W	0146	0.4	12	18 Th	0205	1.3	40
	0800	5.8	177		0818	6.0	183
	1412	0.3	9		1501	0.0	0
	2020	5.4	165		2111	4.4	134
4 Th	0214	0.7	21	19 F	0229	1.7	52
	0825	6.2	189		0840	6.0	183
	1455	-0.1	-3		1533	0.0	0
	2104	5.1	155		2148	4.1	125
5 F	0243	1.0	30	20 Sa	0251	2.0	61
	0857	6.4	195		0903	5.9	180
	1540	-0.4	-12		1609	0.1	3
	2153	4.7	143		2230	3.8	116
6 Sa	0315	1.5	46	21 Su	0306	2.3	70
	0932	6.5	198		0930	5.7	174
	1629	-0.5	-15		1651	0.3	9
	2249	4.2	128		2320	3.4	104
7 Su	0350	2.0	61	22 M	0324	2.6	79
	1011	6.4	195		0957	5.5	168
	1728	-0.3	-9		1736	0.5	15
8 M	0000	3.7	113	23 Tu	0036	3.2	98
	0422	2.4	73		0339	2.9	88
	1056	6.2	189		1029	5.2	158
	1840	-0.1	-3		1837	0.8	24
9 Tu	0138	3.4	104	24 W	1114	4.9	149
	0515	2.9	88		1951	0.9	27
	1157	5.8	177				
	2005	0.1	3				
10 W	0343	3.5	107	25 Th	1217	4.5	137
	0648	3.3	101		2107	0.9	27
	1323	5.3	162				
	2129	0.1	3				
11 Th	0458	3.9	119	26 F	0528	3.7	113
	0911	3.2	98		0844	3.6	110
	1502	5.1	155		1359	4.3	131
	2239	0.0	0		2203	0.8	24
12 F	0540	4.4	134	27 Sa	0535	4.0	122
	1044	2.7	82		1025	3.1	94
	1628	5.1	155		1539	4.3	131
	2329	0.0	0		2249	0.8	24
13 Sa	0612	4.8	146	28 Su	0543	4.4	134
	1145	2.1	64		1119	2.4	73
	1734	5.2	158		1649	4.4	134
					2324	0.7	21
14 Su	0014	0.1	3	29 M	0601	4.9	149
	0642	5.2	158		1201	1.7	52
	1233	1.4	43		1745	4.5	137
	1827	5.2	158		2356	0.8	24
15 M	0046	0.3	9	30 Tu	0621	5.4	165
	0707	5.5	168		1240	0.9	27
	1315	0.9	27		1836	4.7	143
	1912	5.1	155				
				31 W	0028	0.9	27
					0646	5.9	180
					1321	0.1	3
					1925	4.7	143

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0100	1.1	34	16 F	0128	2.0	61
	0715	6.4	195		0745	6.1	186
	1403	-0.5	-15		1452	-0.3	-9
	2017	4.6	140		2115	3.8	116
2 F	0135	1.3	40	17 Sa	0153	2.2	67
	0749	6.8	207		0809	6.1	186
	1446	-1.0	-30		1525	-0.4	-12
	2106	4.5	137		2157	3.7	113
3 Sa	0210	1.6	49	18 Su	0219	2.4	73
	0826	7.0	213		0838	6.0	183
	1534	-1.2	-37		1600	-0.3	-9
	2200	4.2	128		2236	3.5	107
4 Su	0249	2.0	61	19 M	0244	2.6	79
	0905	7.0	213		0907	5.9	180
	1627	-1.2	-37		1638	-0.2	-6
	2259	3.9	119		2325	3.4	104
5 M	0328	2.3	70	20 Tu	0310	2.8	85
	0953	6.8	207		0938	5.7	174
	1723	-1.0	-30		1720	0.0	0
6 Tu	0012	3.7	113	21 W	0024	3.3	101
	0417	2.7	82		0342	3.0	91
	1043	6.3	192		1010	5.4	165
	1827	-0.7	-21		1803	0.2	6
7 W	0131	3.7	113	22 Th	0133	3.3	101
	0522	3.0	91		0421	3.2	98
	1146	5.8	177		1052	5.0	152
	1938	-0.3	-9		1855	0.4	12
8 Th	0301	3.9	119	23 F	0242	3.5	107
	0709	3.2	98		0533	3.3	101
	1304	5.2	158		1144	4.6	140
	2047	0.0	0		1947	0.6	18
9 F	0403	4.3	131	24 Sa	0331	3.8	116
	0906	2.9	88		0745	3.3	101
	1437	4.7	143		1253	4.2	128
	2151	0.2	6		2036	0.8	24
10 Sa	0451	4.7	143	25 Su	0403	4.1	125
	1037	2.3	70		0937	2.9	88
	1606	4.4	134		1430	3.8	116
	2242	0.5	15		2129	1.0	30
11 Su	0527	5.1	155	26 M	0431	4.6	140
	1139	1.6	49		1047	2.1	64
	1719	4.3	131		1607	3.7	113
	2326	0.8	24		2212	1.2	37
12 M	0601	5.4	165	27 Tu	0500	5.1	155
	1228	1.0	30		1142	1.3	40
	1819	4.2	128		1722	3.7	113
					2255	1.4	43
13 Tu	0003	1.1	34	28 W	0533	5.7	174
	0627	5.7	174		1227	0.4	12
	1310	0.5	15		1828	3.8	116
	1911	4.1	125		2340	1.6	49
14 W	0035	1.5	46	29 Th	0606	6.2	189
	0654	5.9	180		1310	-0.4	-12
	1348	0.1	3		1924	4.0	122
	1957	4.0	122				
15 Th	0100	1.7	52	30 F	0021	1.7	52
	0720	6.0	183		0644	6.7	204
	1420	-0.2	-6		1355	-1.1	-34
	2036	3.9	119		2021	4.0	122

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0103	1.9	58	16 Su	0135	2.5	76
	0726	7.1	216		0752	6.1	186
	1441	-1.5	-46		1518	-0.6	-18
	2110	4.1	125		2155	3.6	110
2 Su	0148	2.0	61	17 M	0207	2.5	76
	0808	7.3	223		0824	6.1	186
	1532	-1.7	-52		1551	-0.6	-18
	2205	4.0	122		2230	3.6	110
3 M	0234	2.1	64	18 Tu	0239	2.6	79
	0855	7.2	219		0857	6.0	183
	1621	-1.7	-52		1622	-0.5	-15
	2301	4.0	122		2306	3.6	110
4 Tu	0326	2.3	70	19 W	0314	2.6	79
	0943	6.9	210		0929	5.8	177
	1710	-1.4	-43		1656	-0.4	-12
					2348	3.6	110
5 W	0000	4.0	122	20 Th	0353	2.7	82
	0422	2.5	76		1001	5.6	171
	1037	6.4	195		1731	-0.2	-6
	1803	-1.0	-30				
6 Th	0059	4.1	125	21 F	0023	3.7	113
	0531	2.6	79		0438	2.8	85
	1133	5.7	174		1038	5.2	158
	1859	-0.5	-15		1803	0.1	3
7 F	0158	4.2	128	22 Sa	0105	3.8	116
	0657	2.7	82		0539	2.8	85
	1239	4.9	149		1120	4.6	140
	1952	0.1	3		1842	0.4	12
8 Sa	0257	4.5	137	23 Su	0147	4.1	125
	0835	2.5	76		0730	2.7	82
	1401	4.2	128		1218	4.0	122
	2048	0.6	18		1917	0.8	24
9 Su	0349	4.8	146	24 M	0229	4.4	134
	1011	2.0	61		0838	2.4	73
	1531	3.7	113		1341	3.4	104
	2139	1.1	34		2003	1.2	37
10 M	0436	5.1	155	25 Tu	0315	4.8	146
	1127	1.4	43		1011	1.7	52
	1704	3.4	104		1533	3.1	94
	2231	1.5	46		2055	1.6	49
11 Tu	0513	5.4	165	26 W	0402	5.2	158
	1219	0.8	24		1120	0.9	27
	1819	3.4	104		1721	3.1	94
	2317	1.9	58		2157	2.0	61
12 W	0550	5.6	171	27 Th	0447	5.8	177
	1302	0.3	9		1216	0.0	0
	1918	3.5	107		1835	3.3	101
	2356	2.2	67		2257	2.2	67
13 Th	0622	5.8	177	28 F	0537	6.3	192
	1340	-0.1	-3		1307	-0.8	-24
	2009	3.5	107		1939	3.5	107
					2356	2.2	67
14 F	0031	2.3	70	29 Sa	0625	6.8	207
	0652	5.9	180		1353	-1.4	-43
	1415	-0.4	-12		2028	3.8	116
	2048	3.6	110				
15 Sa	0103	2.4	73	30 Su	0047	2.2	67
	0723	6.0	183		0713	7.1	216
	1446	-0.5	-15		1439	-1.8	-55
	2123	3.6	110		2111	4.0	122
				31 M	0143	2.1	64
					0802	7.3	223
					1524	-1.9	-58
					2157	4.1	125

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN FRANCISCO (Golden Gate), CALIFORNIA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0255	5.1	155	16	0323	5.3	162
M	0753	2.8	85	Tu	0909	2.2	67
	1340	5.2	158		1449	4.2	128
	2010	-0.1	-3		2047	1.2	37
2	0331	5.4	165	17	0355	5.4	165
Tu	0856	2.4	73	W	1015	1.9	58
	1442	4.7	143		1559	3.7	113
	2054	0.5	15		2129	1.9	58
3	0409	5.6	171	18	0432	5.5	168
W	1008	2.0	61	Th	1121	1.7	52
	1555	4.1	125		1738	3.4	104
	2139	1.2	37		2215	2.6	79
4	0451	5.9	180	19	0511	5.6	171
Th	1124	1.3	40	F	1226	1.3	40
	1736	3.8	116		1943	3.5	107
	2235	2.0	61		2317	3.1	94
5	0539	6.3	192	20	0557	5.7	174
F	1230	0.7	21	Sa	1325	0.9	27
	1925	3.8	116		2105	3.9	119
	2341	2.6	79				
6	0630	6.6	201	21	0029	3.4	104
Sa	1335	0.0	0	Su	0645	5.8	177
	2052	4.2	128		1414	0.5	15
					2158	4.2	128
7	0050	3.0	91	22	0132	3.5	107
Su	0723	6.8	207	M	0735	6.0	183
	1431	-0.6	-18		1459	0.1	3
	2158	4.6	140		2236	4.4	134
8	0156	3.2	98	23	0224	3.5	107
M	0818	7.0	213	Tu	0823	6.2	189
	1523	-1.0	-30		1537	-0.2	-6
	2250	4.9	149		2311	4.6	140
9	0254	3.2	98	24	0309	3.4	104
Tu	0911	7.1	216	W	0909	6.3	192
	1611	-1.3	-40		1612	-0.5	-15
	2338	5.1	155		2337	4.7	143
10	0350	3.1	94	25	0349	3.2	98
W	1002	7.1	216	Th	0954	6.4	195
	1657	-1.4	-43		1648	-0.8	-24
11	0020	5.2	158	26	0005	4.8	146
Th	0443	2.9	88	F	0430	2.9	88
	1051	6.9	210		1033	6.4	195
	1739	-1.2	-37		1720	-0.9	-27
12	0059	5.3	162	27	0034	4.9	149
F	0533	2.7	82	Sa	0511	2.6	79
	1137	6.6	201		1115	6.2	189
	1818	-1.0	-30		1752	-0.8	-24
13	0138	5.3	162	28	0104	5.1	155
Sa	0622	2.6	79	Su	0553	2.3	70
	1223	6.1	186		1200	6.0	183
	1857	-0.6	-18		1825	-0.6	-18
14	0213	5.3	162	29	0134	5.3	162
Su	0718	2.4	73	M	0639	2.0	61
	1308	5.5	168		1245	5.6	171
	1933	-0.1	-3		1901	-0.1	-3
15	0247	5.3	162	30	0206	5.5	168
M	0810	2.3	70	Tu	0734	1.7	52
	1356	4.8	146		1341	5.0	152
	2009	0.6	18		1939	0.5	15
				31	0241	5.8	177
				W	0833	1.3	40
					1445	4.5	137
					2021	1.2	37

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0317	6.0	183	16	0319	5.4	165
Th	0939	1.0	30	F	1016	1.3	40
	1605	4.0	122		1721	3.5	107
	2107	2.0	61		2115	3.0	91
2	0405	6.2	189	17	0405	5.4	165
F	1055	0.7	21	Sa	1123	1.2	37
	1751	3.8	116		1931	3.6	110
	2206	2.7	82		2224	3.4	104
3	0459	6.4	195	18	0500	5.4	165
Sa	1210	0.3	9	Su	1233	1.0	30
	1941	4.0	122		2050	3.9	119
	2322	3.2	98				
4	0603	6.5	198	19	0000	3.6	110
Su	1319	-0.1	-3	M	0600	5.5	168
	2057	4.4	134		1332	0.6	18
					2129	4.2	128
5	0044	3.3	101	20	0111	3.5	107
M	0707	6.6	201	Tu	0658	5.7	174
	1421	-0.5	-15		1423	0.2	6
	2149	4.7	143		2201	4.4	134
6	0157	3.2	98	21	0204	3.3	101
Tu	0809	6.7	204	W	0757	5.8	177
	1513	-0.7	-21		1503	-0.2	-6
	2233	5.0	152		2225	4.5	137
7	0256	2.9	88	22	0249	2.9	88
W	0905	6.7	204	Th	0849	6.0	183
	1601	-0.9	-27		1539	-0.5	-15
	2310	5.1	155		2251	4.7	143
8	0348	2.6	79	23	0332	2.5	76
Th	0957	6.6	201	F	0935	6.0	183
	1640	-0.9	-27		1614	-0.6	-18
	2348	5.2	158		2319	4.9	149
9	0436	2.2	67	24	0414	2.0	61
F	1044	6.3	192	Sa	1021	6.0	183
	1718	-0.7	-21		1649	-0.6	-18
					2345	5.1	155
10	0022	5.3	162	25	0455	1.5	46
Sa	0521	2.0	61	Su	1109	5.9	180
	1128	6.0	183		1721	-0.4	-12
	1751	-0.4	-12				
11	0052	5.3	162	26	0013	5.4	165
Su	0605	1.7	52	M	0538	1.0	30
	1213	5.5	168		1159	5.6	171
	1825	0.0	0		1757	0.0	0
12	0121	5.3	162	27	0042	5.7	174
M	0647	1.6	49	Tu	0627	0.6	18
	1255	5.0	152		1251	5.2	158
	1854	0.6	18		1832	0.6	18
13	0148	5.3	162	28	0116	5.9	180
Tu	0731	1.5	46	W	0716	0.3	9
	1342	4.5	137		1348	4.8	146
	1926	1.2	37		1910	1.3	40
14	0215	5.3	162				
W	0819	1.4	43				
	1433	4.1	125				
	1958	1.8	55				
15	0243	5.4	165				
Th	0912	1.4	43				
	1539	3.7	113				
	2033	2.5	76				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0153	6.1	186	16	0145	5.3	162
Th	0811	0.2	6	F	0823	0.7	21
	1459	4.4	134		1535	3.8	116
	1953	2.0	61		1951	3.0	91
2	0235	6.2	189	17	0224	5.3	162
F	0917	0.1	3	Sa	0918	0.8	24
	1623	4.1	125		1702	3.7	113
	2048	2.7	82		2033	3.3	101
3	0331	6.2	189	18	0309	5.2	158
Sa	1029	0.1	3	Su	1021	0.8	24
	1803	4.0	122		1848	3.8	116
	2157	3.2	98		2202	3.6	110
4	0432	6.1	186	19	0408	5.1	155
Su	1149	0.1	3	M	1133	0.7	21
	1935	4.3	131		2001	4.0	122
	2330	3.3	101		2336	3.5	107
5	0542	6.0	183	20	0515	5.1	155
M	1301	-0.1	-3	Tu	1238	0.5	15
	2035	4.6	140		2035	4.1	125
6	0054	3.1	94	21	0050	3.2	98
Tu	0656	6.0	183	W	0622	5.1	155
	1402	-0.3	-9		1331	0.2	6
	2121	4.8	146		2103	4.3	131
7	0200	2.7	82	22	0143	2.8	85
W	0804	6.0	183	Th	0728	5.2	158
	1453	-0.4	-12		1418	-0.1	-3
	2201	5.0	152		2129	4.6	140
8	0256	2.2	67	23	0231	2.2	67
Th	0859	5.9	180	F	0827	5.3	162
	1536	-0.4	-12		1456	-0.2	-6
	2237	5.1	155		2154	4.8	146
9	0344	1.7	52	24	0313	1.5	46
F	0952	5.8	177	Sa	0921	5.4	165
	1611	-0.3	-9		1535	-0.2	-6
	2309	5.2	158		2223	5.1	155
10	0426	1.3	40	25	0354	0.8	24
Sa	1041	5.5	168	Su	1015	5.4	165
	1647	0.0	0		1610	0.0	0
	2338	5.3	162		2252	5.4	165
11	0505	1.0	30	26	0436	0.2	6
Su	1126	5.2	158	M	1107	5.3	162
	1718	0.4	12		1646	0.4	12
					2321	5.8	177
12	0001	5.3	162	27	0522	-0.4	-12
M	0544	0.8	24	Tu	1203	5.1	155
	1208	4.9	149		1724	1.0	30
	1746	0.8	24		2357	6.1	186
13	0026	5.3	162	28	0608	-0.7	-21
Tu	0620	0.6	18	W	1302	4.9	149
	1251	4.6	140		1803	1.6	49
	1818	1.4	43				
14	0051	5.3	162	29	0033	6.3	192
W	0659	0.6	18	Th	0700	-0.9	-27
	1339	4.3	131		1403	4.7	143
	1847	1.9	58		1849	2.1	64
15	0113	5.3	162	30	0115	6.3	192
Th	0737	0.6	18	F	0755	-0.8	-24
	1430	4.0	122		1514	4.4	134
	1915	2.5	76		1940	2.7	82
				31	0206	6.2	189
				Sa	0855	-0.6	-18
					1631	4.3	131
					2043	3.1	94

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0304	6.0	183	16 M	0226	5.0	152
	1007	-0.3	-9		0936	0.3	9
	1754	4.3	131		1756	4.0	122
	2209	3.2	98		2147	3.5	107
2 M	0411	5.7	174	17 Tu	0325	4.8	146
	1119	-0.2	-6		1036	0.3	9
	1908	4.5	137		1848	4.1	125
	2339	3.0	91		2312	3.3	101
3 Tu	0530	5.4	165	18 W	0434	4.7	143
	1229	-0.1	-3		1137	0.3	9
	1957	4.7	143		1926	4.3	131
4 W	0057	2.6	79	19 Th	0021	2.8	85
	0643	5.2	158		0547	4.6	140
	1330	0.0	0		1232	0.2	6
	2041	4.9	149		1957	4.5	137
5 Th	0158	2.0	61	20 F	0119	2.2	67
	0752	5.1	155		0659	4.5	137
	1419	0.1	3		1319	0.2	6
	2119	5.1	155		2027	4.8	146
6 F	0248	1.4	43	21 Sa	0205	1.4	43
	0855	5.0	152		0808	4.6	140
	1458	0.3	9		1404	0.3	9
	2151	5.2	158		2057	5.2	158
7 Sa	0333	0.9	27	22 Su	0251	0.6	18
	0950	4.8	146		0911	4.7	143
	1535	0.5	15		1449	0.6	18
	2220	5.3	162		2129	5.6	171
8 Su	0412	0.5	15	23 M	0333	-0.2	-6
	1039	4.7	143		1014	4.7	143
	1610	0.9	27		1529	1.0	30
	2247	5.3	162		2201	6.0	183
9 M	0447	0.1	3	24 Tu	0421	-0.9	-27
	1127	4.5	137		1113	4.8	146
	1642	1.3	40		1613	1.5	46
	2309	5.4	165		2238	6.3	192
10 Tu	0522	-0.1	-3	25 W	0507	-1.4	-43
	1212	4.4	134		1210	4.8	146
	1714	1.8	55		1655	1.9	58
	2333	5.4	165		2318	6.5	198
11 W	0554	-0.2	-6	26 Th	0554	-1.6	-49
	1257	4.3	131		1311	4.8	146
	1743	2.2	67		1741	2.4	73
	2359	5.4	165				
12 Th	0630	-0.2	-6	27 F	0001	6.6	201
	1343	4.2	128		0645	-1.6	-49
	1815	2.7	82		1411	4.7	143
					1836	2.7	82
13 F	0027	5.4	165	28 Sa	0049	6.4	195
	0708	-0.1	-3		0740	-1.4	-43
	1435	4.0	122		1517	4.6	140
	1846	3.0	91		1935	3.0	91
14 Sa	0059	5.3	162	29 Su	0144	6.1	186
	0750	0.1	3		0838	-1.0	-30
	1536	3.9	119		1623	4.6	140
	1926	3.3	101		2046	3.1	94
15 Su	0137	5.2	158	30 M	0243	5.7	174
	0838	0.2	6		0941	-0.6	-18
	1643	3.9	119		1724	4.7	143
	2024	3.5	107		2213	3.0	91

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0352	5.2	158	16 W	0249	4.7	143
	1048	-0.3	-9		0948	-0.1	-3
	1821	4.8	146		1738	4.4	134
	2338	2.6	79		2241	3.0	91
2 W	0508	4.8	146	17 Th	0355	4.4	134
	1148	0.1	3		1041	0.1	3
	1910	5.0	152		1817	4.7	143
					2351	2.4	73
3 Th	0045	2.0	61	18 F	0512	4.1	125
	0627	4.4	134		1133	0.4	12
	1241	0.4	12		1851	5.0	152
	1952	5.2	158				
4 F	0147	1.4	43	19 Sa	0051	1.6	49
	0743	4.2	128		0637	3.9	119
	1330	0.7	21		1225	0.7	21
	2028	5.3	162		1926	5.4	165
5 Sa	0236	0.8	24	20 Su	0140	0.7	21
	0849	4.1	125		0800	4.0	122
	1414	1.1	34		1318	1.2	37
	2100	5.4	165		2003	5.8	177
6 Su	0318	0.3	9	21 M	0232	-0.2	-6
	0948	4.1	125		0914	4.2	128
	1452	1.5	46		1407	1.6	49
	2129	5.5	168		2040	6.2	189
7 M	0355	-0.1	-3	22 Tu	0317	-0.9	-27
	1043	4.2	128		1019	4.4	134
	1531	1.9	58		1455	2.0	61
	2156	5.5	168		2121	6.5	198
8 Tu	0428	-0.4	-12	23 W	0406	-1.5	-46
	1133	4.2	128		1122	4.6	140
	1606	2.3	70		1544	2.4	73
	2222	5.6	171		2204	6.8	207
9 W	0500	-0.5	-15	24 Th	0452	-1.9	-58
	1220	4.2	128		1218	4.8	146
	1642	2.6	79		1633	2.7	82
	2249	5.6	171		2250	6.9	210
10 Th	0536	-0.6	-18	25 F	0543	-2.0	-61
	1305	4.3	131		1314	4.9	149
	1717	2.9	88		1729	2.9	88
	2318	5.6	171		2341	6.8	207
11 F	0607	-0.6	-18	26 Sa	0633	-1.9	-58
	1348	4.2	128		1406	4.9	149
	1752	3.2	98		1825	3.0	91
	2350	5.5	168				
12 Sa	0646	-0.5	-15	27 Su	0030	6.5	198
	1433	4.2	128		0724	-1.6	-49
	1824	3.3	101		1502	4.9	149
					1925	3.0	91
13 Su	0026	5.4	165	28 M	0125	6.1	186
	0725	-0.4	-12		0817	-1.1	-34
	1522	4.2	128		1554	4.9	149
	1913	3.4	104		2039	2.9	88
14 M	0108	5.3	162	29 Tu	0224	5.5	168
	0809	-0.3	-9		0910	-0.6	-18
	1611	4.2	128		1645	5.0	152
	2009	3.5	107		2200	2.6	79
15 Tu	0154	5.0	152	30 W	0330	4.8	146
	0858	-0.2	-6		1003	-0.1	-3
	1656	4.3	131		1731	5.1	155
	2123	3.3	101		2313	2.2	67
				31 Th	0442	4.2	128
					1059	0.5	15
					1817	5.3	162

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0026	1.6	49	16 Sa	0452	3.8	116
	0606	3.8	116		1042	1.0	30
	1149	1.0	30		1753	5.6	171
	1856	5.4	165				
2 Sa	0124	1.1	34	17 Su	0022	1.1	34
	0731	3.6	110		0629	3.6	110
	1239	1.5	46		1136	1.6	49
	1934	5.5	168		1834	6.0	183
3 Su	0213	0.5	15	18 M	0117	0.3	9
	0849	3.7	113		0802	3.7	113
	1324	2.0	61		1235	2.1	64
	2008	5.7	174		1919	6.3	192
4 M	0256	0.1	3	19 Tu	0213	-0.5	-15
	0955	3.9	119		0921	4.1	125
	1413	2.4	73		1331	2.5	76
	2041	5.7	174		2004	6.7	204
5 Tu	0334	-0.3	-9	20 W	0305	-1.1	-34
	1051	4.1	125		1029	4.4	134
	1459	2.7	82		1430	2.8	85
	2113	5.8	177		2052	6.9	210
6 W	0409	-0.5	-15	21 Th	0354	-1.6	-49
	1136	4.2	128		1124	4.7	143
	1541	3.0	91		1526	2.9	88
	2145	5.9	180		2145	7.1	216
7 Th	0445	-0.6	-18	22 F	0443	-1.8	-55
	1218	4.4	134		1214	4.9	149
	1619	3.2	98		1623	3.0	91
	2218	5.9	180		2237	7.1	216
8 F	0517	-0.7	-21	23 Sa	0532	-1.9	-58
	1257	4.4	134		1302	5.0	152
	1655	3.3	101		1718	2.9	88
	2253	5.9	180		2327	6.9	210
9 Sa	0551	-0.8	-24	24 Su	0618	-1.7	-52
	1336	4.4	134		1346	5.1	155
	1733	3.4	104		1815	2.8	85
	2329	5.8	177				
10 Su	0627	-0.8	-24	25 M	0018	6.5	198
	1417	4.4	134		0705	-1.3	-40
	1814	3.4	104		1429	5.1	155
					1913	2.6	79
11 M	0007	5.6	171	26 Tu	0110	5.9	180
	0703	-0.7	-21		0750	-0.9	-27
	1450	4.5	137		1515	5.2	158
	1900	3.3	101		2019	2.5	76
12 Tu	0047	5.4	165	27 W	0205	5.2	158
	0742	-0.6	-18		0834	-0.3	-9
	1525	4.6	140		1557	5.3	162
	1953	3.2	98		2125	2.2	67
13 W	0133	5.1	155	28 Th	0304	4.5	137
	0824	-0.4	-12		0918	0.4	12
	1500	4.7	143		1635	5.4	165
	2100	2.9	88		2237	1.9	58
14 Th	0227	4.6	140	29 F	0413	3.9	119
	0906	-0.1	-3		1005	1.1	34
	1639	4.9	149		1717	5.5	168
	2207	2.5	76		2346	1.5	46
15 F	0330	4.2	128	30 Sa	0543	3.5	107
	0949	0.4	12		1054	1.7	52
	1714	5.2	158		1756	5.6	171
	2316	1.9	58				

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN FRANCISCO (Golden Gate), CALIFORNIA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0049	1.1	34	16 M	0636	3.6	110
	0721	3.4	104		1100	2.5	76
	1146	2.3	70		1752	6.4	195
	1834	5.7	174				
2 M	0144	0.6	18	17 Tu	0059	0.1	3
	0848	3.7	113		0819	3.9	119
	1245	2.8	85		1206	2.9	88
	1915	5.8	177		1849	6.6	201
3 Tu	0230	0.3	9	18 W	0158	-0.5	-15
	0957	4.0	122		0928	4.3	131
	1341	3.1	94		1319	3.1	94
	1957	5.9	180		1944	6.9	210
4 W	0311	-0.1	-3	19 Th	0252	-1.0	-30
	1048	4.2	128		1025	4.6	140
	1433	3.3	101		1423	3.1	94
	2036	6.0	183		2041	7.0	213
5 Th	0350	-0.3	-9	20 F	0345	-1.3	-40
	1126	4.4	134		1112	4.9	149
	1516	3.3	101		1521	3.0	91
	2117	6.1	186		2137	7.1	216
6 F	0423	-0.5	-15	21 Sa	0433	-1.4	-43
	1202	4.5	137		1154	5.0	152
	1558	3.3	101		1616	2.7	82
	2156	6.1	186		2228	6.9	210
7 Sa	0458	-0.7	-21	22 Su	0517	-1.4	-43
	1233	4.6	140		1233	5.2	158
	1639	3.3	101		1709	2.5	76
	2235	6.1	186		2317	6.6	201
8 Su	0531	-0.8	-24	23 M	0557	-1.2	-37
	1303	4.6	140		1311	5.2	158
	1716	3.2	98		1802	2.3	70
	2313	6.0	183				
9 M	0606	-0.8	-24	24 Tu	0007	6.2	189
	1334	4.7	143		0636	-0.8	-24
	1756	3.0	91		1347	5.3	162
	2352	5.8	177		1855	2.1	64
10 Tu	0638	-0.7	-21	25 W	0054	5.6	171
	1404	4.8	146		0715	-0.2	-6
	1839	2.8	85		1422	5.4	165
					1950	1.9	58
11 W	0034	5.5	168	26 Th	0147	4.9	149
	0710	-0.5	-15		0752	0.4	12
	1436	5.0	152		1459	5.4	165
	1932	2.6	79		2046	1.8	55
12 Th	0121	5.1	155	27 F	0243	4.3	131
	0749	-0.1	-3		0831	1.2	37
	1504	5.2	158		1533	5.5	168
	2029	2.3	70		2151	1.6	49
13 F	0215	4.6	140	28 Sa	0353	3.8	116
	0825	0.5	15		0913	1.9	58
	1541	5.5	168		1611	5.5	168
	2135	1.8	55		2254	1.4	43
14 Sa	0324	4.1	125	29 Su	0525	3.5	107
	0909	1.1	34		0958	2.5	76
	1618	5.8	177		1653	5.6	171
	2244	1.3	40				
15 Su	0452	3.7	113	30 M	0000	1.2	37
	0958	1.8	55		0719	3.6	110
	1703	6.1	186		1104	3.1	94
	2353	0.7	21		1736	5.7	174
				31 Tu	0102	0.9	27
					0846	3.9	119
					1213	3.4	104
					1829	5.8	177

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0156	0.6	18	16 Th	0145	-0.3	-9
	0941	4.2	128		0916	4.6	140
	1319	3.5	107		1320	3.3	101
	1919	5.9	180		1936	6.7	204
2 Th	0245	0.3	9	17 F	0241	-0.6	-18
	1020	4.4	134		1001	4.9	149
	1414	3.4	104		1426	2.9	88
	2010	6.0	183		2038	6.7	204
3 F	0324	-0.1	-3	18 Sa	0329	-0.8	-24
	1055	4.5	137		1043	5.1	155
	1500	3.3	101		1520	2.5	76
	2055	6.1	186		2130	6.7	204
4 Sa	0359	-0.3	-9	19 Su	0413	-0.8	-24
	1123	4.6	140		1121	5.2	158
	1542	3.1	94		1609	2.1	64
	2139	6.2	189		2223	6.5	198
5 Su	0431	-0.5	-15	20 M	0452	-0.7	-21
	1149	4.7	143		1154	5.3	162
	1620	2.8	85		1658	1.8	55
	2219	6.1	186		2311	6.1	186
6 M	0505	-0.6	-18	21 Tu	0530	-0.4	-12
	1217	4.8	146		1226	5.4	165
	1657	2.5	76		1744	1.5	46
	2301	6.0	183				
7 Tu	0535	-0.6	-18	22 W	0000	5.7	174
	1242	5.0	152		0606	0.1	3
	1737	2.2	67		1257	5.5	168
	2343	5.7	174		1829	1.3	40
8 W	0607	-0.3	-9	23 Th	0047	5.2	158
	1310	5.2	158		0638	0.7	21
	1819	1.9	58		1326	5.5	168
					1915	1.2	37
9 Th	0029	5.4	165	24 F	0134	4.7	143
	0639	0.1	3		0710	1.4	43
	1340	5.4	165		1355	5.5	168
	1910	1.6	49		2003	1.2	37
10 F	0121	5.0	152	25 Sa	0232	4.2	128
	0713	0.6	18		0745	2.0	61
	1410	5.7	174		1427	5.5	168
	2003	1.3	40		2056	1.2	37
11 Sa	0217	4.5	137	26 Su	0339	3.9	119
	0750	1.3	40		0827	2.7	82
	1449	5.9	180		1506	5.5	168
	2106	1.0	30		2155	1.3	40
12 Su	0335	4.1	125	27 M	0518	3.8	116
	0837	2.0	61		0912	3.2	98
	1532	6.1	186		1548	5.5	168
	2215	0.7	21		2304	1.2	37
13 M	0509	3.9	119	28 Tu	0708	3.9	119
	0929	2.7	82		1032	3.6	110
	1624	6.3	192		1641	5.4	165
	2327	0.4	12				
14 Tu	0657	4.0	122	29 W	0013	1.1	34
	1042	3.2	98		0826	4.1	125
	1724	6.4	195		1154	3.7	113
					1746	5.5	168
15 W	0040	0.0	0	30 Th	0114	0.8	24
	0820	4.3	131		0905	4.4	134
	1205	3.4	104		1304	3.5	107
	1830	6.6	201		1848	5.6	171
				31 F	0204	0.5	15
					0934	4.5	137
					1357	3.3	101
					1941	5.7	174

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0245	0.2	6	16 Su	0305	-0.2	-6
	1006	4.6	140		1006	5.4	165
	1441	2.9	88		1519	1.7	52
	2034	5.8	177		2129	5.9	180
2 Su	0322	-0.1	-3	17 M	0345	-0.1	-3
	1031	4.8	146		1039	5.5	168
	1521	2.5	76		1604	1.3	40
	2119	5.9	180		2221	5.7	174
3 M	0354	-0.2	-6	18 Tu	0423	0.2	6
	1056	5.0	152		1108	5.6	171
	1601	2.0	61		1645	0.9	27
	2207	5.8	177		2310	5.4	165
4 Tu	0427	-0.2	-6	19 W	0455	0.6	18
	1121	5.2	158		1136	5.6	171
	1636	1.5	46		1724	0.6	18
	2253	5.7	174		2358	5.1	155
5 W	0458	0.0	0	20 Th	0527	1.2	37
	1146	5.4	165		1204	5.6	171
	1718	1.1	34		1803	0.5	15
	2340	5.5	168				
6 Th	0533	0.4	12	21 F	0046	4.8	146
	1215	5.7	174		0559	1.7	52
	1802	0.7	21		1230	5.6	171
					1842	0.5	15
7 F	0031	5.2	158	22 Sa	0134	4.5	137
	0605	1.0	30		0631	2.3	70
	1246	5.9	180		1256	5.6	171
	1849	0.4	12		1924	0.6	18
8 Sa	0126	4.9	149	23 Su	0230	4.3	131
	0644	1.6	49		0706	2.9	88
	1322	6.1	186		1326	5.5	168
	1941	0.2	6		2009	0.7	21
9 Su	0233	4.5	137	24 M	0336	4.1	125
	0726	2.3	70		0748	3.3	101
	1405	6.3	192		1403	5.4	165
	2040	0.2	6		2102	0.9	27
10 M	0352	4.3	131	25 Tu	0504	4.0	122
	0815	2.9	88		0840	3.7	113
	1454	6.3	192		1452	5.3	162
	2149	0.2	6		2204	1.0	30
11 Tu	0526	4.2	128	26 W	0639	4.1	125
	0924	3.3	101		1009	3.8	116
	1557	6.2	189		1551	5.2	158
	2305	0.2	6		2315	1.0	30
12 W	0654	4.4	134	27 Th	0738	4.3	131
	1053	3.5	107		1140	3.7	113
	1707	6.2	189		1700	5.1	155
13 Th	0021	0.0	0	28 F	0021	0.8	24
	0801	4.7	143		0813	4.5	137
	1219	3.3	101		1247	3.4	104
	1821	6.1	186		1809	5.1	155
14 F	0126	-0.1	-3	29 Sa	0112	0.6	18
	0847	4.9	149		0841	4.6	140
	1330	2.9	88		1336	2.9	88
	1931	6.1	186		1912	5.2	158
15 Sa	0220	-0.2	-6	30 Su	0154	0.4	12
	0929	5.2	158		0906	4.8	146
	1427	2.3	70		1418	2.3	70
	2034	6.1	186		2011	5.2	158

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0236	0.3	9	16	0309	0.9	27
M	0932	5.1	155	Tu	0953	5.8	177
	1500	1.7	52		1552	0.5	15
	2103	5.3	162		2223	4.9	149
2	0312	0.4	12	17	0348	1.3	40
Tu	0957	5.4	165	W	1021	5.8	177
	1538	1.0	30		1631	0.1	3
	2157	5.3	162		2315	4.8	146
3	0347	0.6	18	18	0419	1.7	52
W	1025	5.7	174	Th	1048	5.9	180
	1617	0.4	12		1706	-0.1	-3
	2249	5.3	162				
4	0422	0.9	27	19	0004	4.7	143
Th	1054	6.0	183	F	0454	2.2	67
	1658	-0.2	-6		1114	5.8	177
	2343	5.2	158		1741	-0.1	-3
5	0456	1.4	43	20	0051	4.6	140
F	1126	6.3	192	Sa	0529	2.7	82
	1744	-0.5	-15		1139	5.8	177
					1816	-0.1	-3
6	0039	5.0	152	21	0139	4.5	137
Sa	0536	2.0	61	Su	0601	3.1	94
	1202	6.5	198		1207	5.7	174
	1830	-0.7	-21		1852	0.1	3
7	0139	4.9	149	22	0229	4.4	134
Su	0618	2.5	76	M	0638	3.4	104
	1244	6.6	201		1239	5.6	171
	1924	-0.7	-21		1934	0.2	6
8	0246	4.7	143	23	0331	4.3	131
M	0707	3.0	91	Tu	0716	3.7	113
	1333	6.5	198		1318	5.5	168
	2024	-0.5	-15		2023	0.4	12
9	0403	4.6	140	24	0436	4.3	131
Tu	0809	3.4	104	W	0817	3.9	119
	1428	6.3	192		1406	5.2	158
	2130	-0.3	-9		2117	0.6	18
10	0521	4.6	140	25	0539	4.3	131
W	0932	3.5	107	Th	0941	3.9	119
	1536	6.0	183		1505	5.0	152
	2242	-0.1	-3		2216	0.6	18
11	0630	4.8	146	26	0629	4.5	137
Th	1105	3.3	101	F	1109	3.6	110
	1653	5.7	174		1611	4.8	146
	2353	0.1	3		2313	0.7	21
12	0722	5.0	152	27	0706	4.7	143
F	1227	2.9	88	Sa	1216	3.1	94
	1809	5.5	168		1723	4.6	140
13	0055	0.2	6	28	0009	0.7	21
Sa	0810	5.3	162	Su	0735	4.9	149
	1331	2.2	67		1309	2.5	76
	1925	5.3	162		1839	4.5	137
14	0145	0.3	9	29	0058	0.7	21
Su	0849	5.5	168	M	0804	5.2	158
	1424	1.6	49		1355	1.7	52
	2031	5.2	158		1948	4.6	140
15	0230	0.6	18	30	0141	0.9	27
M	0921	5.7	174	Tu	0833	5.5	168
	1510	1.0	30		1434	0.9	27
	2130	5.1	155		2055	4.7	143
				31	0223	1.2	37
				W	0901	5.9	180
					1516	0.1	3
					2155	4.8	146

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0304	1.5	46	16	0350	2.7	82
Th	0937	6.3	192	F	1006	6.1	186
	1558	-0.6	-18		1650	-0.4	-12
	2253	4.9	149				
2	0345	2.0	61	17	0012	4.6	140
F	1009	6.6	201	Sa	0429	3.0	91
	1644	-1.1	-34		1034	6.1	186
	2349	5.0	152		1722	-0.4	-12
3	0429	2.4	73	18	0055	4.7	143
Sa	1048	6.9	210	Su	0504	3.3	101
	1729	-1.4	-43		1103	6.0	183
					1757	-0.4	-12
4	0046	5.0	152	19	0140	4.6	140
Su	0514	2.8	85	M	0539	3.5	107
	1130	7.0	213		1135	5.9	180
	1818	-1.4	-43		1830	-0.3	-9
5	0145	5.0	152	20	0223	4.6	140
M	0603	3.1	94	Tu	0618	3.7	113
	1217	6.9	210		1210	5.8	177
	1910	-1.3	-40		1910	-0.2	-6
6	0247	4.9	149	21	0309	4.5	137
Tu	0658	3.3	101	W	0700	3.8	116
	1311	6.6	201		1248	5.6	171
	2006	-1.0	-30		1950	0.0	0
7	0349	4.9	149	22	0351	4.5	137
W	0808	3.4	104	Th	0753	3.8	116
	1408	6.2	189		1330	5.3	162
	2107	-0.6	-18		2035	0.1	3
8	0452	5.0	152	23	0436	4.6	140
Th	0932	3.3	101	F	0907	3.7	113
	1515	5.7	174		1426	4.9	149
	2210	-0.1	-3		2124	0.3	9
9	0549	5.2	158	24	0517	4.7	143
F	1059	2.9	88	Sa	1026	3.3	101
	1635	5.2	158		1528	4.5	137
	2314	0.3	9		2211	0.6	18
10	0638	5.4	165	25	0553	5.0	152
Sa	1217	2.3	70	Su	1134	2.8	85
	1754	4.7	143		1644	4.2	128
					2303	0.9	27
11	0010	0.6	18	26	0626	5.3	162
Su	0722	5.6	171	M	1234	2.1	64
	1324	1.7	52		1811	4.0	122
	1917	4.5	137		2356	1.3	40
12	0059	1.0	30	27	0701	5.6	171
M	0800	5.8	177	Tu	1327	1.2	37
	1413	1.0	30		1936	4.0	122
	2028	4.4	134				
13	0149	1.4	43	28	0048	1.7	52
Tu	0836	5.9	180	W	0736	6.0	183
	1500	0.4	12		1412	0.4	12
	2134	4.4	134		2053	4.2	128
14	0231	1.9	58	29	0138	2.1	64
W	0908	6.0	183	Th	0813	6.5	198
	1540	0.0	0		1457	-0.5	-15
	2229	4.5	137		2200	4.5	137
15	0311	2.3	70	30	0229	2.5	76
Th	0937	6.1	186	F	0855	6.8	207
	1615	-0.2	-6		1543	-1.1	-34
	2322	4.6	140		2259	4.8	146

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0318	2.8	85	16	0009	4.7	143
Sa	0938	7.1	216	Su	0409	3.4	104
	1631	-1.6	-49		1008	6.2	189
	2354	5.0	152		1707	-0.5	-15
2	0406	3.0	91	17	0047	4.8	146
Su	1023	7.3	223	M	0448	3.5	107
	1717	-1.8	-55		1040	6.2	189
					1741	-0.5	-15
3	0047	5.1	155	18	0119	4.7	143
M	0459	3.1	94	Tu	0525	3.5	107
	1112	7.3	223		1116	6.1	186
	1806	-1.7	-52		1813	-0.5	-15
4	0139	5.2	158	19	0155	4.7	143
Tu	0551	3.2	98	W	0601	3.5	107
	1203	7.0	213		1154	5.9	180
	1857	-1.5	-46		1847	-0.5	-15
5	0232	5.2	158	20	0230	4.7	143
W	0651	3.2	98	Th	0643	3.5	107
	1257	6.6	201		1230	5.6	171
	1948	-1.1	-34		1924	-0.3	-9
6	0320	5.2	158	21	0302	4.8	146
Th	0758	3.1	94	F	0729	3.4	104
	1354	6.0	183		1312	5.3	162
	2039	-0.6	-18		1958	-0.1	-3
7	0412	5.3	162	22	0334	4.9	149
F	0918	2.9	88	Sa	0831	3.2	98
	1457	5.3	162		1358	4.8	146
	2132	0.0	0		2036	0.3	9
8	0458	5.5	168	23	0409	5.1	155
Sa	1039	2.5	76	Su	0936	2.8	85
	1612	4.6	140		1456	4.4	134
	2225	0.6	18		2118	0.8	24
9	0547	5.6	171	24	0444	5.4	165
Su	1156	1.9	58	M	1046	2.3	70
	1735	4.1	125		1615	3.9	119
	2320	1.3	40		2203	1.3	40
10	0629	5.8	177	25	0523	5.7	174
M	1301	1.3	40	Tu	1152	1.6	49
	1906	3.9	119		1755	3.7	113
					2259	1.9	58
11	0012	1.8	55	26	0603	6.1	186
Tu	0710	6.0	183	W	1253	0.8	24
	1356	0.8	24		1937	3.8	116
	2031	4.0	122		2359	2.5	76
12	0105	2.3	70	27	0648	6.4	195
W	0749	6.1	186	Th	1349	0.0	0
	1442	0.3	9		2105	4.1	125
	2142	4.2	128				
13	0157	2.8	85	28	0104	2.9	88
Th	0824	6.2	189	F	0738	6.8	207
	1525	0.0	0		1441	-0.7	-21
	2238	4.4	134		2207	4.5	137
14	0243	3.1	94	29	0203	3.1	94
F	0857	6.2	189	Sa	0828	7.1	216
	1600	-0.3	-9		1531	1.2	-37
	2327	4.6	140		2301	4.8	146
15	0328	3.3	101	30	0302	3.2	98
Sa	0932	6.2	189	Su	0921	7.3	223
	1635	-0.4	-12		1619	-1.6	-49
					2346	5.1	155
				31	0355	3.1	94
				M	1013	7.4	226
					1708	-1.7	-52

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HUMBOLDT BAY, CALIFORNIA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time (h m)	Height (ft)	Height (cm)
1 M	0306	6.0	183
	0824	2.8	85
	1358	6.4	195
	2051	-0.3	-9
2 Tu	0341	6.3	192
	0927	2.5	76
	1456	5.8	177
	2132	0.4	12
3 W	0419	6.6	201
	1036	2.0	61
	1608	5.1	155
	2217	1.1	34
4 Th	0501	7.0	213
	1148	1.3	40
	1738	4.5	137
	2306	1.8	55
5 F	0548	7.3	223
	1301	0.6	18
	1919	4.3	131
6 Sa	0002	2.5	76
	0641	7.6	232
	1406	-0.2	-6
	2049	4.5	137
7 Su	0107	3.0	91
	0737	7.8	238
	1508	-0.9	-27
	2204	4.8	146
8 M	0213	3.2	98
	0836	8.0	244
	1601	-1.4	-43
	2259	5.2	158
9 Tu	0319	3.3	101
	0929	8.1	247
	1652	-1.7	-52
	2348	5.5	168
10 W	0418	3.2	98
	1023	8.1	247
	1738	-1.8	-55
11 Th	0031	5.8	177
	0513	3.0	91
	1112	8.0	244
	1820	-1.7	-52
12 F	0110	6.0	183
	0604	2.8	85
	1201	7.7	235
	1900	-1.3	-40
13 Sa	0149	6.1	186
	0657	2.7	82
	1246	7.2	219
	1937	-0.9	-27
14 Su	0224	6.2	189
	0746	2.5	76
	1332	6.6	201
	2014	-0.3	-9
15 M	0259	6.3	192
	0838	2.4	73
	1417	5.9	180
	2046	0.4	12
16 Tu	0331	6.4	195
	0932	2.2	67
	1509	5.2	158
	2118	1.1	34
17 W	0407	6.4	195
	1029	2.0	61
	1613	4.6	140
	2157	1.8	55
18 Th	0445	6.4	195
	1131	1.7	52
	1730	4.1	125
	2236	2.4	73
19 F	0525	6.4	195
	1240	1.4	43
	1909	4.0	122
	2324	3.0	91
20 Sa	0611	6.4	195
	1343	0.9	27
	2043	4.1	125
21 Su	0027	3.4	104
	0704	6.5	198
	1442	0.5	15
	2148	4.4	134
22 M	0132	3.6	110
	0756	6.7	204
	1529	0.0	0
	2237	4.7	143
23 Tu	0235	3.6	110
	0847	6.9	210
	1614	-0.4	-12
	2316	5.0	152
24 W	0327	3.5	107
	0932	7.1	216
	1651	-0.7	-21
	2351	5.2	158
25 Th	0417	3.3	101
	1015	7.3	223
	1729	-1.0	-30
26 F	0019	5.5	168
	0502	3.1	94
	1057	7.5	229
	1803	-1.1	-34
27 Sa	0048	5.7	174
	0545	2.8	85
	1139	7.4	226
	1838	-1.0	-30
28 Su	0116	6.0	183
	0631	2.4	73
	1221	7.2	219
	1910	-0.8	-24
29 M	0145	6.4	195
	0720	2.0	61
	1306	6.8	207
	1945	-0.3	-9
30 Tu	0217	6.7	204
	0812	1.6	49
	1358	6.2	189
	2021	0.3	9
31 W	0251	7.0	213
	0910	1.2	37
	1458	5.5	168
	2059	1.0	30

FEBRUARY

Day	Time (h m)	Height (ft)	Height (cm)
1 Th	0331	7.2	219
	1013	0.9	27
	1609	4.9	149
	2141	1.8	55
2 F	0413	7.3	223
	1123	0.5	15
	1740	4.4	134
	2230	2.5	76
3 Sa	0509	7.4	226
	1237	0.1	3
	1925	4.3	131
	2333	3.1	94
4 Su	0613	7.4	226
	1351	-0.3	-9
	2053	4.5	137
5 M	0050	3.4	104
	0719	7.5	229
	1456	-0.7	-21
	2159	4.9	149
6 Tu	0211	3.4	104
	0827	7.5	229
	1550	-1.0	-30
	2249	5.3	162
7 W	0321	3.2	98
	0929	7.6	232
	1638	-1.2	-37
	2331	5.7	174
8 Th	0419	2.9	88
	1021	7.6	232
	1721	-1.1	-34
9 F	0006	6.0	183
	0510	2.5	76
	1110	7.5	229
	1800	-0.9	-27
10 Sa	0038	6.2	189
	0557	2.2	67
	1155	7.2	219
	1833	-0.6	-18
11 Su	0108	6.4	195
	0640	1.9	58
	1235	6.8	207
	1904	-0.1	-3
12 M	0137	6.5	198
	0726	1.7	52
	1316	6.3	192
	1935	0.5	15
13 Tu	0203	6.5	198
	0805	1.5	46
	1403	5.7	174
	2004	1.1	34
14 W	0232	6.5	198
	0851	1.4	43
	1448	5.2	158
	2033	1.7	52
15 Th	0301	6.5	198
	0940	1.3	40
	1543	4.6	140
	2108	2.3	70
16 F	0333	6.4	195
	1039	1.3	40
	1654	4.2	128
	2143	2.9	88
17 Sa	0412	6.3	192
	1141	1.2	37
	1827	4.0	122
	2233	3.3	101
18 Su	0505	6.2	189
	1250	1.0	30
	2010	4.1	125
	2337	3.6	110
19 M	0610	6.2	189
	1359	0.7	21
	2119	4.4	134
20 Tu	0100	3.8	116
	0719	6.4	195
	1454	0.3	9
	2205	4.7	143
21 W	0210	3.6	110
	0818	6.6	201
	1540	-0.1	-3
	2239	5.1	155
22 Th	0309	3.3	101
	0911	6.9	210
	1620	-0.4	-12
	2307	5.4	165
23 F	0400	2.9	88
	0959	7.1	216
	1655	-0.6	-18
	2337	5.8	177
24 Sa	0446	2.3	70
	1046	7.2	219
	1731	-0.6	-18
25 Su	0002	6.2	189
	0532	1.7	52
	1133	7.2	219
	1804	-0.4	-12
26 M	0030	6.7	204
	0619	1.1	34
	1219	6.9	210
	1838	0.0	0
27 Tu	0059	7.0	213
	0707	0.6	18
	1309	6.5	198
	1914	0.5	15
28 W	0131	7.4	226
	0757	0.2	6
	1403	6.0	183
	1948	1.2	37

MARCH

Day	Time (h m)	Height (ft)	Height (cm)
1 Th	0206	7.5	229
	0852	0.0	0
	1505	5.4	165
	2030	1.9	58
2 F	0248	7.6	232
	0951	-0.1	-3
	1617	4.8	146
	2112	2.5	76
3 Sa	0339	7.4	226
	1100	-0.1	-3
	1750	4.5	137
	2212	3.1	94
4 Su	0439	7.2	219
	1216	-0.1	-3
	1922	4.6	140
	2327	3.5	107
5 M	0553	7.0	213
	1330	-0.2	-6
	2039	4.9	149
6 Tu	0057	3.5	107
	0712	6.9	210
	1436	-0.3	-9
	2134	5.3	162
7 W	0218	3.2	98
	0823	6.9	210
	1529	-0.4	-12
	2219	5.7	174
8 Th	0324	2.7	82
	0927	6.9	210
	1614	-0.4	-12
	2254	6.0	183
9 F	0419	2.2	67
	1019	6.9	210
	1653	-0.2	-6
	2327	6.3	192
10 Sa	0502	1.7	52
	1105	6.8	207
	1727	0.1	3
	2355	6.5	198
11 Su	0544	1.3	40
	1150	6.5	198
	1759	0.5	15
12 M	0020	6.7	204
	0622	1.0	30
	1229	6.2	189
	1828	1.0	30
13 Tu	0045	6.7	204
	0701	0.8	24
	1311	5.9	180
	1856	1.5	46
14 W	0109	6.7	204
	0736	0.6	18
	1353	5.5	168
	1925	2.0	61
15 Th	0133	6.7	204
	0815	0.6	18
	1437	5.1	155
	1953	2.4	73
16 F	0159	6.6	201
	0901	0.6	18
	1529	4.8	146
	2028	2.9	88
17 Sa	0233	6.4	195
	0949	0.8	24
	1632	4.4	134
	2107	3.3	101
18 Su	0313	6.3	192
	1050	0.9	27
	1757	4.3	131
	2156	3.6	110
19 M	0405	6.1	186
	1157	0.9	27
	1927	4.4	134
	2312	3.8	116
20 Tu	0517	6.0	183
	1306	0.7	21
	2029	4.6	140
21 W	0036	3.7	113
	0634	6.0	183
	1404	0.5	15
	2111	5.0	152
22 Th	0153	3.4	104
	0749	6.2	189
	1452	0.3	9
	2143	5.4	165
23 F	0252	2.8	85
	0848	6.5	198
	1534	0.1	3
	2212	5.9	180
24 Sa	0343	2.1	64
	0945	6.6	201
	1614	0.1	3
	2241	6.4	195
25 Su	0432	1.3	40
	1036	6.7	204
	1651	0.3	9
	2309	6.9	210
26 M	0518	0.5	15
	1128	6.7	204
	1728	0.6	18
	2341	7.4	226
27 Tu	0604	-0.2	-6
	1220	6.5	198
	1805	1.1	34
28 W	0013	7.7	235
	0652	-0.8	-24
	1313	6.2	189
	1844	1.6	49
29 Th	0050	7.9	241
	0741	-1.0	-30
	1409	5.8	177
	1923	2.1	64
30 F	0132	7.9	241
	0835	-1.0	-30
	1513	5.4	165
	2009	2.6	79
31 Sa	0217	7.7	235
	0936	-0.8	-24
	1624	5.1	155
	2102	3.1	94

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time (h m)	Height (ft)	Height (cm)	Day	Time (h m)	Height (ft)	Height (cm)
1 Su	0310	7.3	223	16 M	0233	6.3	192
	1040	-0.5	-15		1009	0.4	12
	1745	4.9	149		1729	4.7	143
	2210	3.4	104		2140	3.8	116
2 M	0418	6.9	210	17 Tu	0326	6.1	186
	1150	-0.2	-6		1109	0.5	15
	1904	5.1	155		1835	4.8	146
	2338	3.5	107		2255	3.8	116
3 Tu	0539	6.4	195	18 W	0435	5.8	177
	1302	0.0	0		1209	0.6	18
	2005	5.4	165		1927	5.1	155
4 W	0105	3.2	98	19 Th	0019	3.5	107
	0702	6.2	189		0557	5.7	174
	1400	0.2	6		1307	0.6	18
	2055	5.8	177		2005	5.5	168
5 Th	0220	2.7	82	20 F	0133	2.9	88
	0816	6.1	186		0717	5.7	174
	1453	0.4	12		1357	0.7	21
	2134	6.1	186		2041	6.0	183
6 F	0319	2.1	64	21 Sa	0233	2.1	64
	0919	5.1	186		0826	5.8	177
	1537	0.6	18		1441	0.8	24
	2209	6.4	195		2113	6.5	198
7 Sa	0408	1.5	46	22 Su	0325	1.1	34
	1014	6.1	186		0932	6.0	183
	1613	0.9	27		1527	1.0	30
	2241	6.7	204		2145	7.1	216
8 Su	0450	0.9	27	23 M	0414	0.1	3
	1100	6.0	183		1031	6.1	186
	1648	1.3	40		1609	1.4	43
	2308	6.8	207		2220	7.6	232
9 M	0528	0.5	15	24 Tu	0503	-0.7	-21
	1145	5.9	180		1127	6.1	186
	1720	1.7	52		1651	1.8	55
	2331	6.9	210		2257	8.0	244
10 Tu	0603	0.2	6	25 W	0548	-1.4	-43
	1226	5.8	177		1221	6.1	186
	1749	2.1	64		1733	2.1	64
	2355	6.9	210		2336	8.3	253
11 W	0636	0.0	0	26 Th	0637	-1.7	-52
	1308	5.6	171		1320	5.9	180
	1820	2.4	73		1818	2.5	76
12 Th	0020	6.9	210	27 F	0019	8.3	253
	0711	-0.1	-3		0729	-1.8	-55
	1347	5.4	165		1414	5.7	174
	1852	2.8	85		1904	2.9	88
13 F	0045	6.8	207	28 Sa	0104	8.1	247
	0749	-0.1	-3		0821	-1.6	-49
	1432	5.1	155		1517	5.5	168
	1921	3.1	94		1957	3.1	94
14 Sa	0113	6.7	204	29 Su	0155	7.7	235
	0832	0.1	3		0917	-1.2	-37
	1518	4.9	149		1620	5.4	165
	1959	3.4	104		2059	3.3	101
15 Su	0149	6.5	198	30 M	0254	7.1	216
	0918	0.3	9		1016	-0.7	-21
	1620	4.7	143		1726	5.5	168
	2045	3.6	110		2214	3.4	104

MAY

Day	Time (h m)	Height (ft)	Height (cm)	Day	Time (h m)	Height (ft)	Height (cm)
1 Tu	0403	6.5	198	16 W	0257	6.1	186
	1119	-0.1	-3		1026	0.2	6
	1828	5.7	174		1739	5.4	165
	2338	3.2	98		2244	3.5	107
2 W	0522	5.9	180	17 Th	0403	5.7	174
	1219	0.3	9		1115	0.5	15
	1923	6.0	183		1821	5.7	174
					2358	3.0	91
3 Th	0101	2.8	85	18 F	0525	5.3	162
	0645	5.5	168		1208	0.8	24
	1312	0.8	24		1903	6.2	189
	2006	6.3	192				
4 F	0211	2.1	64	19 Sa	0112	2.2	67
	0804	5.3	162		0651	5.1	155
	1403	1.2	37		1258	1.2	37
	2047	6.6	201		1941	6.7	204
5 Sa	0305	1.4	43	20 Su	0711	1.3	40
	0909	5.3	162		0810	5.1	155
	1448	1.6	49		1349	1.6	49
	2119	6.8	207		2019	7.2	219
6 Su	0351	0.8	24	21 M	0305	0.2	6
	1006	5.3	162		0924	5.3	162
	1527	2.0	61		1441	2.0	61
	2151	6.9	210		2058	7.7	235
7 M	0430	0.3	9	22 Tu	0357	-0.7	-21
	1057	5.4	165		1028	5.5	168
	1606	2.3	70		1527	2.4	73
	2220	7.0	213		2140	8.2	250
8 Tu	0506	-0.1	-3	23 W	0447	-1.5	-46
	1143	5.4	165		1127	5.6	171
	1641	2.7	82		1619	2.7	82
	2245	7.0	213		2223	8.4	256
9 W	0541	-0.4	-12	24 Th	0536	-2.0	-61
	1225	5.4	165		1225	5.7	174
	1716	3.0	91		1707	2.9	88
	2310	7.0	213		2309	8.5	259
10 Th	0617	-0.5	-15	25 F	0625	-2.2	-67
	1306	5.4	165		1318	5.8	177
	1748	3.2	98		1757	3.0	91
	2340	7.0	213		2358	8.4	256
11 F	0652	-0.5	-15	26 Sa	0717	-2.1	-64
	1348	5.3	162		1413	5.8	177
	1823	3.4	104		1852	3.2	98
12 Sa	0009	6.9	210	27 Su	0047	8.0	244
	0729	-0.5	-15		0806	-1.8	-55
	1430	5.2	158		1506	5.8	177
	1859	3.5	107		1950	3.2	98
13 Su	0044	6.8	207	28 M	0139	7.5	229
	0809	-0.4	-12		0856	-1.2	-37
	1515	5.1	155		1600	5.8	177
	1941	3.7	113		2056	3.2	98
14 M	0120	6.6	201	29 Tu	0239	6.8	207
	0851	-0.2	-6		0948	-0.6	-18
	1601	5.1	155		1650	6.0	183
	2030	3.7	113		2207	3.1	94
15 Tu	0204	6.4	195	30 W	0344	6.1	186
	0937	0.0	0		1038	0.0	0
	1653	5.2	158		1742	6.2	189
	2131	3.7	113		2324	2.8	85
				31 Th	0500	5.4	165
					1127	0.7	21
					1827	6.4	195

JUNE

Day	Time (h m)	Height (ft)	Height (cm)	Day	Time (h m)	Height (ft)	Height (cm)
1 F	0038	2.3	70	16 Sa	0503	4.9	149
	0621	4.9	149		1115	1.2	37
	1218	1.3	40		1803	6.8	207
	1912	6.6	201				
2 Sa	0145	1.7	52	17 Su	0043	1.4	43
	0743	4.6	140		0633	4.6	140
	1307	1.9	58		1207	1.8	55
	1951	6.8	207		1848	7.2	219
3 Su	0241	1.0	30	18 M	0148	0.5	15
	0855	4.7	143		0804	4.6	140
	1352	2.4	73		1300	2.3	70
	2027	6.9	210		1933	7.7	235
4 M	0327	0.5	15	19 Tu	0247	-0.4	-12
	0959	4.8	146		0924	4.8	146
	1441	2.8	85		1358	2.8	85
	2103	7.0	213		2023	8.0	244
5 Tu	0409	0.0	0	20 W	0343	-1.2	-37
	1051	5.0	152		1031	5.1	155
	1526	3.1	94		1457	3.0	91
	2135	7.1	216		2113	8.3	253
6 W	0447	-0.4	-12	21 Th	0435	-1.8	-55
	1137	5.1	155		1128	5.4	165
	1605	3.3	101		1556	3.2	98
	2207	7.1	216		2205	8.5	259
7 Th	0523	-0.6	-18	22 F	0527	-2.1	-64
	1219	5.2	158		1224	5.6	171
	1647	3.5	107		1652	3.2	98
	2239	7.1	216		2255	8.5	259
8 F	0558	-0.7	-21	23 Sa	0614	-2.2	-67
	1301	5.2	158		1309	5.8	177
	1723	3.5	107		1747	3.1	94
	2314	7.1	216		2346	8.2	250
9 Sa	0636	-0.8	-24	24 Su	0700	-2.0	-61
	1336	5.3	162		1355	5.9	180
	1802	3.6	110		1843	3.0	91
	2346	7.1	216				
10 Su	0712	-0.8	-24	25 M	0038	7.8	238
	1415	5.3	162		0745	-1.6	-49
	1841	3.6	110		1440	6.1	186
					1940	2.9	88
11 M	0025	7.0	213	26 Tu	0127	7.2	219
	0748	-0.7	-21		0828	-1.0	-30
	1453	5.4	165		1522	6.2	189
	1928	3.6	110		2043	2.7	82
12 Tu	0100	6.8	207	27 W	0224	6.5	198
	0826	-0.6	-18		0910	-0.3	-9
	1528	5.5	168		1607	6.4	195
	2019	3.5	107		2146	2.5	76
13 W	0149	6.4	195	28 Th	0318	5.7	174
	0906	-0.3	-9		0951	0.4	12
	1607	5.7	174		1648	6.5	198
	2119	3.3	101		2252	2.3	70
14 Th	0241	6.0	183	29 F	0431	5.0	152
	0946	0.1	3		1033	1.2	37
	1643	5.0	183		1722	6.6	201
	2224	2.9	88				
15 F	0344	5.4	165	30 Sa	0001	1.9	58
	1028	0.6	18		0548	4.4	134
	1721	6.4	195		1118	1.9	58
	2334	2.3	70		1810	6.7	204

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HUMBOLDT BAY, CALIFORNIA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0106	1.4	43	16 M	0021	0.7	21
	0719	4.2	128		0629	4.3	131
	1207	2.5	76		1125	2.4	73
	1853	6.7	204		1803	7.5	229
2 M	0207	0.9	27	17 Tu	0130	0.0	0
	0838	4.3	131		0807	4.3	131
	1259	3.0	91		1227	2.9	88
	1935	6.8	207		1859	7.7	235
3 Tu	0258	0.4	12	18 W	0234	-0.7	-21
	0950	4.5	137		0928	4.6	140
	1352	3.3	101		1334	3.2	98
	2018	6.9	210		1959	7.9	241
4 W	0342	0.0	0	19 Th	0332	-1.2	-37
	1043	4.7	143		1031	5.0	152
	1447	3.5	107		1444	3.3	101
	2100	6.9	210		2058	8.1	247
5 Th	0425	-0.3	-9	20 F	0425	-1.6	-49
	1128	4.9	149		1119	5.4	165
	1537	3.6	110		1548	3.2	98
	2142	7.1	216		2154	8.2	250
6 F	0504	-0.6	-18	21 Sa	0513	-1.8	-55
	1207	5.1	155		1205	5.7	174
	1622	3.6	110		1646	2.9	88
	2220	7.2	219		2249	8.1	247
7 Sa	0540	-0.8	-24	22 Su	0558	-1.7	-52
	1239	5.3	162		1244	5.9	180
	1707	3.5	107		1740	2.7	82
	2259	7.2	219		2341	7.9	241
8 Su	0615	-0.9	-27	23 M	0639	-1.4	-43
	1313	5.4	165		1325	6.2	189
	1746	3.4	104		1836	2.4	73
	2334	7.2	219				
9 M	0649	-0.9	-27	24 Tu	0030	7.4	226
	1345	5.5	168		0719	-1.0	-30
	1831	3.2	98		1401	6.4	195
					1926	2.2	67
10 Tu	0013	7.0	213	25 W	0117	6.8	207
	0723	-0.8	-24		0754	-0.4	-12
	1414	5.7	174		1436	6.5	198
	1916	3.0	91		2021	2.0	61
11 W	0055	6.8	207	26 Th	0207	6.1	186
	0755	-0.5	-15		0830	0.3	9
	1443	6.0	183		1510	6.6	201
	2007	2.8	85		2115	1.8	55
12 Th	0140	6.4	195	27 F	0301	5.4	165
	0830	-0.1	-3		0905	1.1	34
	1515	6.3	192		1545	6.6	201
	2103	2.4	73		2212	1.7	52
13 F	0233	5.8	177	28 Sa	0403	4.8	146
	0907	0.4	12		0940	1.8	55
	1547	6.6	201		1622	6.5	198
	2203	1.9	58		2311	1.5	46
14 Sa	0338	5.2	158	29 Su	0517	4.3	131
	0947	1.0	30		1022	2.4	73
	1627	6.9	210		1704	6.5	198
	2311	1.4	43				
15 Su	0455	4.6	140	30 M	0017	1.2	37
	1029	1.7	52		0650	4.1	125
	1713	7.2	219		1111	3.0	91
					1754	6.4	195
				31 Tu	0123	0.9	27
					0819	4.2	128
					1210	3.4	104
					1846	6.5	198

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0219	0.6	18	16 Th	0220	-0.6	-18
	0932	4.4	134		0922	4.8	146
	1319	3.6	110		1334	3.4	104
	1942	6.6	201		1951	7.5	229
2 Th	0314	0.2	6	17 F	0319	0.9	-27
	1022	4.7	143		1014	5.2	158
	1420	3.6	110		1447	3.2	98
	2034	6.7	204		2057	7.6	232
3 F	0358	-0.1	-3	18 Sa	0409	-1.1	-34
	1059	4.9	149		1057	5.6	171
	1517	3.5	107		1551	2.8	85
	2121	6.9	210		2155	7.7	235
4 Sa	0437	-0.4	-12	19 Su	0454	-1.1	-34
	1131	5.2	158		1136	6.0	183
	1606	3.3	101		1644	2.3	70
	2205	7.1	216		2247	7.5	229
5 Su	0513	-0.6	-18	20 M	0533	-0.9	-27
	1202	5.4	165		1211	6.3	192
	1649	3.0	91		1733	1.9	58
	2243	7.2	219		2336	7.3	223
6 M	0548	-0.7	-21	21 Tu	0611	-0.5	-15
	1231	5.7	174		1243	6.5	198
	1732	2.7	82		1823	1.6	49
	2325	7.1	216				
7 Tu	0618	-0.7	-21	22 W	0021	6.8	207
	1257	6.0	183		0643	0.0	0
	1815	2.4	73		1311	6.6	201
					1907	1.3	40
8 W	0004	7.0	213	23 Th	0107	6.3	192
	0650	-0.4	-12		0715	0.6	18
	1324	6.3	192		1340	6.7	204
	1900	2.0	61		1951	1.1	34
9 Th	0050	6.6	201	24 F	0153	5.8	177
	0722	-0.1	-3		0747	1.2	37
	1352	6.6	201		1411	6.7	204
	1949	1.6	49		2037	1.1	34
10 F	0138	6.2	189	25 Sa	0243	5.2	158
	0757	0.5	15		0819	1.9	58
	1421	6.9	210		1440	6.6	201
	2043	1.2	37		2127	1.0	30
11 Sa	0232	5.6	171	26 Su	0339	4.7	143
	0833	1.1	34		0854	2.5	76
	1459	7.1	216		1515	6.4	195
	2140	0.8	24		2219	1.1	34
12 Su	0338	5.0	152	27 M	0450	4.4	134
	0911	1.8	55		0933	3.0	91
	1539	7.3	223		1555	6.3	192
	2246	0.5	15		2325	1.1	34
13 M	0458	4.5	137	28 Tu	0621	4.2	128
	1000	2.5	76		1025	3.4	104
	1632	7.3	223		1648	6.1	186
	2358	0.2	6				
14 Tu	0640	4.3	131	29 W	0033	1.0	30
	1059	3.0	91		0754	4.3	131
	1732	7.4	226		1134	3.7	113
					1753	6.1	186
15 W	0111	-0.2	-6	30 Th	0138	0.8	24
	0815	4.5	137		0859	4.5	137
	1212	3.4	104		1254	3.7	113
	1842	7.4	226		1906	6.2	189
				31 F	0234	0.5	15
					0945	4.8	146
					1403	3.5	107
					2008	6.4	195

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0321	0.1	3	16 Su	0343	-0.3	-9
	1017	5.1	155		1022	6.1	186
	1500	3.2	98		1550	2.0	61
	2057	6.6	201		2153	6.9	210
2 Su	0359	-0.1	-3	17 M	0425	-0.2	-6
	1045	5.5	168		1056	6.5	198
	1550	2.7	82		1641	1.5	46
	2146	6.8	207		2245	6.8	207
3 M	0435	-0.2	-6	18 Tu	0501	0.2	6
	1113	5.8	177		1127	6.7	204
	1632	2.2	67		1723	1.0	30
	2231	6.9	210		2331	6.5	198
4 Tu	0509	-0.2	-6	19 W	0536	0.6	18
	1138	6.2	189		1154	6.9	210
	1715	1.7	52		1806	0.6	18
	2313	6.9	210				
5 W	0539	0.0	0	20 Th	0016	6.2	189
	1204	6.6	201		0608	1.1	34
	1759	1.1	34		1222	6.9	210
	2359	6.7	204		1845	0.4	12
6 Th	0614	0.3	9	21 F	0100	5.9	180
	1232	6.9	210		0637	1.6	49
	1845	0.6	18		1247	6.9	210
					1923	0.3	9
7 F	0049	6.4	195	22 Sa	0143	5.5	168
	0646	0.8	24		0708	2.2	67
	1300	7.2	219		1313	6.7	204
	1930	0.2	6		2002	0.3	9
8 Sa	0140	5.9	180	23 Su	0230	5.2	158
	0722	1.4	43		0740	2.6	79
	1336	7.5	229		1342	6.6	201
	2022	-0.1	-3		2046	0.5	15
9 Su	0238	5.4	165	24 M	0323	4.8	146
	0800	2.0	61		0815	3.1	94
	1415	7.5	229		1417	6.4	195
	2118	-0.2	-6		2136	0.6	18
10 M	0347	4.9	149	25 Tu	0429	4.5	137
	0843	2.6	79		0857	3.4	104
	1501	7.4	226		1456	6.2	189
	2224	-0.2	-6		2234	0.8	24
11 Tu	0510	4.6	140	26 W	0552	4.4	134
	0941	3.1	94		0952	3.7	113
	1600	7.2	219		1549	5.9	180
	2336	-0.2	-6		2340	0.9	27
12 W	0642	4.6	140	27 Th	0717	4.5	137
	1053	3.4	104		1109	3.8	116
	1714	7.0	213		1701	5.8	177
13 Th	0051	-0.2	-6	28 F	0046	0.8	24
	0802	4.9	149		0810	4.8	146
	1223	3.5	107		1233	3.7	113
	1834	6.9	210		1824	5.8	177
14 F	0157	-0.3	-9	29 Sa	0143	0.7	21
	0901	5.3	162		0849	5.1	155
	1346	3.2	98		1343	3.3	101
	1951	6.9	210		1933	5.9	180
15 Sa	0255	-0.4	-12	30 Su	0232	0.5	15
	0943	5.7	174		0921	5.5	168
	1455	2.6	79		1439	2.7	82
	2057	6.9	210		2035	6.1	186

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0311	0.4	12	16	0348	1.0	30
M	0951	6.0	183	Tu	1014	6.9	210
	1529	2.0	61		1630	0.7	21
	2129	6.3	192		2243	6.0	183
2	0350	0.5	15	17	0425	1.4	43
Tu	1017	6.4	195	W	1043	7.1	216
	1615	1.2	37		1709	0.2	6
	2219	6.4	195		2330	5.9	180
3	0425	0.6	18	18	0457	1.8	55
W	1043	6.9	210	Th	1109	7.1	216
	1658	0.4	12		1747	-0.1	-3
	2308	6.4	195				
4	0501	0.9	27	19	0015	5.7	174
Th	1111	7.3	223	F	0532	2.2	67
	1740	-0.3	-9		1134	7.1	216
	2357	6.3	192		1821	-0.3	-9
5	0536	1.3	40	20	0057	5.6	171
F	1143	7.7	235	Sa	0601	2.6	79
	1826	-0.8	-24		1200	7.0	213
					1858	-0.3	-9
6	0049	6.1	186	21	0137	5.4	165
Sa	0615	1.8	55	Su	0633	3.0	91
	1219	7.9	241		1225	6.9	210
	1915	-1.1	-34		1933	-0.2	-6
7	0145	5.8	177	22	0222	5.2	158
Su	0653	2.3	70	M	0708	3.3	101
	1258	7.9	241		1257	6.7	204
	2007	-1.1	-34		2015	0.0	0
8	0245	5.4	165	23	0315	4.9	149
M	0739	2.8	85	Tu	0745	3.5	107
	1344	7.8	238		1332	6.5	198
	2104	-1.0	-30		2101	0.2	6
9	0352	5.1	155	24	0413	4.8	146
Tu	0830	3.2	98	W	0830	3.7	113
	1437	7.4	226		1411	6.2	189
	2205	-0.7	-21		2154	0.4	12
10	0511	5.0	152	25	0516	4.8	146
W	0939	3.5	107	Th	0931	3.9	119
	1542	7.0	213		1507	5.9	180
	2313	-0.4	-12		2247	0.6	18
11	0630	5.1	155	26	0618	4.9	149
Th	1103	3.5	107	F	1045	3.8	116
	1701	6.5	198		1615	5.6	171
					2347	0.7	21
12	0023	-0.1	-3	27	0709	5.2	158
F	0733	5.5	168	Sa	1209	3.5	107
	1234	3.2	98		1734	5.4	165
	1827	6.2	189				
13	0128	0.1	3	28	0041	0.8	24
Sa	0824	5.9	180	Su	0746	5.6	171
	1352	2.7	82		1319	2.9	88
	1946	6.1	186		1857	5.4	165
14	0220	0.3	9	29	0133	0.9	27
Su	0903	6.3	192	M	0818	6.0	183
	1455	1.9	58		1416	2.1	64
	2055	6.1	186		2009	5.5	168
15	0305	0.6	18	30	0218	1.1	34
M	0942	6.7	204	Tu	0850	6.5	198
	1548	1.3	40		1509	1.2	37
	2152	6.0	183		2113	5.6	171
				31	0300	1.3	40
				W	0922	7.1	216
					1554	0.2	6
					2211	5.8	177

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0342	1.6	49	16	0424	2.8	85
Th	0953	7.6	232	F	1028	7.2	219
	1640	-0.7	-21		1728	-0.6	-18
	2304	5.9	180				
2	0422	2.0	61	17	0014	5.4	165
F	1030	8.0	244	Sa	0500	3.0	91
	1725	-1.4	-43		1056	7.2	219
					1804	-0.7	-21
3	0000	5.9	180	18	0055	5.4	165
Sa	0504	2.3	70	Su	0535	3.3	101
	1109	8.3	253		1124	7.1	216
	1814	-1.8	-55		1839	-0.7	-21
4	0053	5.8	177	19	0137	5.3	162
Su	0548	2.6	79	M	0608	3.4	104
	1148	8.4	256		1156	7.0	213
	1903	-1.9	-58		1914	-0.6	-18
5	0149	5.7	174	20	0217	5.2	158
M	0634	2.9	88	Tu	0644	3.6	110
	1233	8.2	250		1228	6.8	207
	1953	-1.8	-55		1953	-0.4	-12
6	0248	5.6	171	21	0259	5.1	155
Tu	0726	3.2	98	W	0724	3.7	113
	1323	7.9	241		1303	6.6	201
	2047	-1.4	-43		2033	-0.2	-6
7	0347	5.5	168	22	0345	5.1	155
W	0829	3.3	101	Th	0814	3.8	116
	1421	7.3	223		1345	6.3	192
	2145	-0.9	-27		2116	0.0	0
8	0452	5.5	168	23	0430	5.2	158
Th	0939	3.4	104	F	0910	3.7	113
	1529	6.7	204		1433	6.0	183
	2245	-0.4	-12		2203	0.3	9
9	0555	5.7	174	24	0516	5.4	165
F	1104	3.2	98	Sa	1024	3.6	110
	1645	6.6	183		1536	5.5	168
	2345	0.2	6		2248	0.6	18
10	0650	6.1	186	25	0558	5.7	174
Sa	1231	2.8	85	Su	1138	3.1	94
	1811	5.5	168		1655	5.1	155
					2338	1.0	30
11	0041	0.7	21	26	0639	6.1	186
Su	0738	6.4	195	M	1248	2.4	73
	1345	2.1	64		1822	4.8	146
	1935	5.3	162				
12	0134	1.1	34	27	0030	1.4	43
M	0818	6.8	207	Tu	0715	6.6	201
	1444	1.3	40		1351	1.4	43
	2047	5.2	158		1947	4.8	146
13	0220	1.6	49	28	0120	1.8	55
Tu	0855	7.0	213	W	0754	7.1	216
	1534	0.6	18		1446	0.4	12
	2150	5.2	158		2100	5.0	152
14	0304	2.0	61	29	0211	2.2	67
W	0927	7.2	219	Th	0832	7.6	232
	1617	0.1	3		1535	-0.6	-18
	2243	5.3	162		2207	5.2	158
15	0342	2.4	73	30	0300	2.5	76
Th	0959	7.2	219	F	0913	8.1	247
	1653	-0.3	-9		1624	-1.4	-43
	2329	5.4	165		2307	5.5	168

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0349	2.8	85	16	0012	5.2	158
Sa	0957	8.4	256	Su	0435	3.5	107
	1713	-2.0	-61		1029	7.1	216
					1748	-0.8	-24
2	0000	5.6	171	17	0047	5.3	162
Su	0441	2.9	88	M	0513	3.5	107
	1044	8.6	262		1105	7.1	216
	1802	-2.3	-70		1823	-0.8	-24
3	0054	5.7	174	18	0123	5.3	162
M	0530	3.0	91	Tu	0551	3.5	107
	1131	8.6	262		1137	7.1	216
	1850	-2.3	-70		1858	-0.8	-24
4	0143	5.8	177	19	0158	5.4	165
Tu	0623	3.1	94	W	0631	3.5	107
	1222	8.3	253		1212	7.0	213
	1940	-2.0	-61		1932	-0.7	-21
5	0235	5.8	177	20	0233	5.4	165
W	0721	3.1	94	Th	0713	3.5	107
	1313	7.8	238		1250	6.7	204
	2029	-1.5	-46		2006	-0.5	-15
6	0327	5.9	180	21	0306	5.5	168
Th	0825	3.1	94	F	0800	3.4	104
	1409	7.1	216		1329	6.4	195
	2118	-0.9	-27		2042	-0.2	-6
7	0417	6.1	186	22	0341	5.7	174
F	0933	3.0	91	Sa	0856	3.2	98
	1512	6.3	192		1418	5.9	180
	2207	-0.2	-6		2118	0.2	6
8	0509	6.3	192	23	0413	5.9	180
Sa	1050	2.7	82	Su	0957	2.9	88
	1624	5.5	168		1514	5.4	165
	2257	0.5	15		2200	0.7	21
9	0558	6.5	198	24	0451	6.3	192
Su	1209	2.2	67	M	1106	2.4	73
	1749	4.9	149		1627	4.8	146
	2348	1.3	40		2242	1.3	40
10	0643	6.7	204	25	0530	6.6	201
M	1322	1.6	49	Tu	1213	1.7	52
	1919	4.6	140		1758	4.4	134
					2331	1.9	58
11	0037	1.9	58	26	0613	7.0	213
Tu	0728	6.9	210	W	1319	0.8	24
	1421	0.9	27		1933	4.3	131
	2037	4.6	140				
12	0129	2.5	76	27	0026	2.4	73
W	0807	7.0	213	Th	0703	7.4	226
	1514	0.4	12		1421	-0.1	-3
	2145	4.7	143		2057	4.6	140
13	0221	2.9	88	28	0125	2.9	88
Th	0845	7.1	216	F	0752	7.8	238
	1556	-0.1	-3		1519	-0.9	-27
	2241	4.9	149		2209	4.9	149
14	0310	3.2	98	29	0227	3.1	94
F	0921	7.1	216	Sa	0844	8.2	250
	1634	-0.4	-12		1611	-1.6	-49
	2327	5.1	155		2307	5.2	158
15	0353	3.4	104	30	0327	3.2	98
Sa	0957	7.1	216	Su	0939	8.5	259
	1713	-0.7	-21		1701	-2.1	-64
					2357	5.5	168
				31	0426	3.1	94
				M	1031	8.6	262
					1750	-2.2	-67

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

CRESCENT CITY, CALIFORNIA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0245	6.6	201	16 Tu	0310	6.8	207
	0812	3.2	98		0921	2.5	76
	1346	6.7	204		1456	5.6	171
	2035	0.2	6		2102	1.6	49
2 Tu	0323	6.8	207	17 W	0345	6.8	207
	0912	2.8	85		1018	2.4	73
	1446	6.1	186		1557	5.0	152
	2113	0.8	24		2139	2.3	70
3 W	0401	7.1	216	18 Th	0424	6.7	204
	1021	2.3	70		1124	2.1	64
	1555	5.4	165		1717	4.5	137
	2156	1.6	49		2218	3.0	91
4 Th	0444	7.3	223	19 F	0507	6.7	204
	1133	1.7	52		1233	1.8	55
	1722	4.9	149		1855	4.3	131
	2245	2.3	70		2303	3.6	110
5 F	0530	7.6	232	20 Sa	0553	6.7	204
	1243	1.0	30		1339	1.4	43
	1859	4.8	146		2033	4.5	137
	2344	3.0	91				
6 Sa	0623	7.8	238	21 Su	0012	4.0	122
	1351	0.2	6		0646	6.8	207
	2029	5.0	152		1432	0.9	27
					2137	4.8	146
7 Su	0053	3.5	107	22 M	0125	4.2	128
	0720	8.1	247		0739	6.9	210
	1451	-0.5	-15		1519	0.5	15
	2140	5.4	165		2223	5.1	155
8 M	0205	3.7	113	23 Tu	0227	4.1	125
	0816	8.3	253		0829	7.2	219
	1543	-1.0	-30		1602	0.0	0
	2236	5.8	177		2254	5.4	165
9 Tu	0311	3.7	113	24 W	0321	3.9	119
	0911	8.4	256		0915	7.4	226
	1633	-1.3	-40		1637	-0.3	-9
	2322	6.1	186		2330	5.7	174
10 W	0408	3.5	107	25 Th	0407	3.7	113
	1005	8.4	256		1000	7.7	235
	1720	-1.4	-43		1713	-0.6	-18
					2355	6.0	183
11 Th	0004	6.4	195	26 F	0449	3.4	104
	0503	3.3	101		1042	7.8	238
	1054	8.3	253		1745	-0.7	-21
	1803	-1.3	-40				
12 F	0045	6.6	201	27 Sa	0027	6.3	192
	0554	3.1	94		0535	3.0	91
	1143	8.1	247		1124	7.8	238
	1842	-1.0	-30		1820	-0.7	-21
13 Sa	0121	6.7	204	28 Su	0055	6.6	201
	0643	2.9	88		0620	2.7	82
	1229	7.6	232		1207	7.6	232
	1921	-0.5	-15		1852	-0.5	-15
14 Su	0159	6.8	207	29 M	0127	6.9	210
	0735	2.8	85		0706	2.3	70
	1317	7.0	213		1255	7.2	219
	1954	0.1	3		1927	0.0	0
15 M	0235	6.8	207	30 Tu	0159	7.2	219
	0825	2.6	79		0756	1.9	58
	1403	6.3	192		1345	6.6	201
	2029	0.8	24		2003	0.7	21
				31 W	0233	7.4	226
					0853	1.5	46
					1444	5.9	180
					2039	1.4	43

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0313	7.5	229	16 F	0316	6.6	201
	0956	1.2	37		1024	1.6	49
	1555	5.3	162		1639	4.4	134
	2121	2.2	67		2118	3.3	101
2 F	0358	7.6	232	17 Sa	0355	6.4	195
	1105	0.9	27		1130	1.6	49
	1722	4.8	146		1816	4.2	128
	2212	3.0	91		2201	3.7	113
3 Sa	0449	7.6	232	18 Su	0448	6.3	192
	1221	0.5	15		1246	1.3	40
	1900	4.7	143		2005	4.4	134
	2318	3.6	110		2320	4.1	125
4 Su	0554	7.6	232	19 M	0554	6.3	192
	1336	0.1	3		1351	1.0	30
	2033	5.0	152		2112	4.7	143
5 M	0044	3.9	119	20 Tu	0053	4.1	125
	0703	7.6	232		0701	6.5	198
	1440	-0.3	-9		1445	0.6	18
	2135	5.4	165		2147	5.0	152
6 Tu	0205	3.8	116	21 W	0206	3.9	119
	0809	7.7	235		0800	6.7	204
	1535	-0.6	-18		1527	0.2	6
	2224	5.8	177		2215	5.4	165
7 W	0314	3.5	107	22 Th	0303	3.5	107
	0909	7.8	238		0856	7.1	216
	1621	-0.8	-24		1604	-0.2	-6
	2303	6.1	186		2244	5.8	177
8 Th	0408	3.1	94	23 F	0349	3.0	91
	1001	7.8	238		0945	7.3	223
	1703	-0.8	-24		1641	-0.4	-12
	2341	6.4	195		2311	6.2	189
9 F	0457	2.7	82	24 Sa	0434	2.4	73
	1050	7.7	235		1031	7.5	229
	1742	-0.6	-18		1713	-0.5	-15
					2341	6.6	201
10 Sa	0013	6.7	204	25 Su	0518	1.8	55
	0542	2.3	70		1116	7.5	229
	1134	7.5	229		1746	-0.3	-9
	1815	-0.3	-9				
11 Su	0045	6.8	207	26 M	0009	7.0	213
	0627	2.1	64		0604	1.2	37
	1220	7.1	216		1204	7.3	223
	1847	0.2	6		1821	0.1	3
12 M	0114	6.9	210	27 Tu	0041	7.4	226
	0709	1.8	55		0650	0.7	21
	1301	6.6	201		1253	6.9	210
	1918	0.8	24		1856	0.6	18
13 Tu	0142	6.9	210	28 W	0114	7.6	232
	0751	1.7	52		0739	0.3	9
	1343	6.0	183		1346	6.3	192
	1947	1.4	43		1934	1.3	40
14 W	0211	6.9	210				
	0836	1.6	49				
	1433	5.5	168				
	2015	2.1	64				
15 Th	0243	6.7	204				
	0925	1.6	49				
	1526	4.9	149				
	2046	2.7	82				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0151	7.7	235	16 F	0145	6.5	198
	0835	0.1	3		0843	0.7	21
	1447	5.7	174		1509	4.8	146
	2013	2.0	61		2007	3.0	91
2 F	0232	7.7	235	17 Sa	0220	6.3	192
	0934	0.1	3		0935	0.9	27
	1558	5.1	155		1616	4.4	134
	2058	2.7	82		2041	3.4	104
3 Sa	0321	7.5	229	18 Su	0300	6.1	186
	1043	0.1	3		1037	1.0	30
	1725	4.8	146		1740	4.3	131
	2158	3.3	101		2132	3.7	113
4 Su	0424	7.2	219	19 M	0355	5.9	180
	1201	0.1	3		1147	1.0	30
	1902	4.8	146		1910	4.3	131
	2320	3.7	113		2255	3.9	119
5 M	0535	6.9	210	20 Tu	0506	5.8	177
	1318	0.0	0		1256	0.8	24
	2021	5.1	155		2011	4.6	140
6 Tu	0054	3.6	110	21 W	0033	3.8	116
	0656	6.8	207		0622	5.9	180
	1421	-0.1	-3		1352	0.6	18
	2115	5.5	168		2051	5.0	152
7 W	0213	3.3	101	22 Th	0145	3.4	104
	0808	6.9	210		0733	6.1	186
	1514	-0.2	-6		1442	0.3	9
	2157	5.8	177		2122	5.4	165
8 Th	0315	2.8	85	23 F	0243	2.7	82
	0909	6.9	210		0833	6.4	195
	1559	-0.2	-6		1521	0.1	3
	2232	6.2	189		2151	5.9	180
9 F	0405	2.2	67	24 Sa	0330	2.0	61
	0959	6.9	210		0927	6.6	201
	1636	-0.1	-3		1558	0.0	0
	2305	6.5	198		2220	6.5	198
10 Sa	0450	1.7	52	25 Su	0415	1.1	34
	1047	6.8	207		1018	6.8	207
	1713	0.2	6		1635	0.2	6
	2331	6.7	204		2250	7.0	213
11 Su	0529	1.3	40	26 M	0500	0.3	9
	1129	6.7	204		1108	6.8	207
	1741	0.5	15		1712	0.4	12
	2359	6.8	207		2324	7.4	226
12 M	0608	1.0	30	27 Tu	0546	-0.4	-12
	1209	6.4	195		1159	6.7	204
	1813	1.0	30		1748	0.9	27
					2357	7.7	235
13 Tu	0024	6.8	207	28 W	0635	-0.9	-27
	0643	0.7	21		1253	6.4	195
	1250	6.0	183		1830	1.4	43
	1839	1.5	46				
14 W	0050	6.8	207	29 Th	0035	7.9	241
	0719	0.6	18		0724	-1.2	-37
	1332	5.6	171		1349	6.0	183
	1907	2.0	61		1909	2.0	61
15 Th	0116	6.7	204	30 F	0117	7.8	238
	0801	0.6	18		0816	-1.1	-34
	1418	5.2	158		1449	5.5	168
	1935	2.5	76		1954	2.5	76
				31 Sa	0203	7.5	229
					0915	-0.9	-27
					1601	5.1	155
					2053	3.0	91

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0257	7.1	216	16 M	0220	5.9	180
	1024	-0.5	-15		0955	0.4	12
	1720	4.9	149		1705	4.5	137
	2203	3.3	101		2124	3.6	110
2 M	0404	6.6	201	17 Tu	0316	5.6	171
	1136	-0.2	-6		1054	0.5	15
	1840	5.0	152		1814	4.6	140
	2333	3.3	101		2246	3.6	110
3 Tu	0524	6.2	189	18 W	0427	5.4	165
	1247	0.0	0		1157	0.5	15
	1947	5.3	162		1905	4.8	146
4 W	0102	3.0	91	19 Th	0009	3.3	101
	0646	6.0	183		0546	5.3	162
	1350	0.1	3		1254	0.5	15
	2037	5.6	171		1947	5.2	158
5 Th	0215	2.5	76	20 F	0122	2.7	82
	0802	5.9	180		0702	5.4	165
	1441	0.3	9		1342	0.5	15
	2115	6.0	183		2020	5.7	174
6 F	0311	1.8	55	21 Sa	0219	1.8	55
	0902	5.9	180		0811	5.6	171
	1523	0.5	15		1427	0.6	18
	2148	6.2	189		2055	6.3	192
7 Sa	0357	1.2	37	22 Su	0311	0.8	24
	0956	5.9	180		0911	5.8	177
	1602	0.8	24		1511	0.8	24
	2220	6.5	198		2127	6.9	210
8 Su	0434	0.7	21	23 M	0358	-0.2	-6
	1039	5.9	180		1010	6.0	183
	1634	1.1	34		1551	1.0	30
	2246	6.6	201		2202	7.4	226
9 M	0511	0.3	9	24 Tu	0442	-1.0	-30
	1125	5.8	177		1105	6.1	186
	1706	1.5	46		1637	1.4	43
	2311	6.7	204		2240	7.8	238
10 Tu	0546	0.0	0	25 W	0530	-1.7	-52
	1204	5.6	171		1159	6.1	186
	1734	1.9	58		1719	1.7	52
	2337	6.7	204		2319	8.0	244
11 W	0621	-0.2	-6	26 Th	0619	-2.1	-64
	1244	5.5	168		1252	5.9	180
	1806	2.2	67		1804	2.1	64
12 Th	0003	6.6	201	27 F	0004	8.0	244
	0656	-0.3	-9		0709	-2.1	-64
	1326	5.3	162		1351	5.7	174
	1835	2.6	79		1853	2.5	76
13 F	0028	6.5	198	28 Sa	0050	7.7	235
	0732	-0.2	-6		0802	-1.9	-58
	1409	5.0	152		1450	5.5	168
	1906	2.9	88		1946	2.7	82
14 Sa	0102	6.4	195	29 Su	0144	7.3	223
	0814	0.0	0		0859	-1.4	-43
	1500	4.7	143		1555	5.3	162
	1945	3.2	98		2049	3.0	91
15 Su	0138	6.1	186	30 M	0243	6.7	204
	0859	0.2	6		1000	-0.9	-27
	1559	4.5	137		1701	5.3	162
	2024	3.4	104		2207	3.0	91

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0352	6.1	186	16 W	0249	5.6	171
	1103	-0.3	-9		1009	0.0	0
	1804	5.4	165		1718	5.1	155
	2334	2.8	85		2231	3.2	98
2 W	0511	5.5	168	17 Th	0355	5.2	158
	1205	0.1	3		1058	0.3	9
	1859	5.6	171		1803	5.4	165
					2348	2.7	82
3 Th	0054	2.3	70	18 F	0511	4.9	149
	0630	5.2	158		1151	0.6	18
	1303	0.6	18		1842	5.8	177
	1949	5.9	180				
4 F	0200	1.7	52	19 Sa	0054	1.9	58
	0746	5.0	152		0633	4.8	146
	1355	1.0	30		1242	1.0	30
	2026	6.2	189		1920	6.3	192
5 Sa	0255	1.1	34	20 Su	0155	1.0	30
	0853	5.0	152		0753	4.9	149
	1441	1.4	43		1334	1.3	40
	2058	6.4	195		1958	6.8	207
6 Su	0337	0.5	15	21 M	0248	-0.1	-3
	0948	5.0	152		0903	5.1	155
	1519	1.7	52		1423	1.7	52
	2130	6.5	198		2040	7.3	223
7 M	0416	0.0	0	22 Tu	0339	-1.0	-30
	1036	5.1	155		1007	5.3	162
	1555	2.1	64		1515	2.0	61
	2159	6.6	201		2122	7.8	238
8 Tu	0452	-0.4	-12	23 W	0429	-1.8	-55
	1119	5.1	155		1104	5.6	171
	1630	2.4	73		1604	2.3	70
	2226	6.7	204		2207	8.0	244
9 W	0527	-0.7	-21	24 Th	0518	-2.3	-70
	1202	5.2	158		1200	5.7	174
	1702	2.6	79		1656	2.5	76
	2255	6.7	204		2255	8.1	247
10 Th	0559	-0.8	-24	25 F	0607	-2.5	-76
	1242	5.1	155		1253	5.8	177
	1737	2.8	85		1745	2.6	79
	2327	6.6	201		2344	8.0	244
11 F	0637	-0.8	-24	26 Sa	0656	-2.4	-73
	1324	5.1	155		1346	5.8	177
	1810	3.0	91		1842	2.7	82
	2357	6.5	198				
12 Sa	0713	-0.8	-24	27 Su	0036	7.7	235
	1406	5.0	152		0748	-2.1	-64
	1848	3.2	98		1438	5.7	174
					1943	2.7	82
13 Su	0033	6.4	195	28 M	0129	7.1	216
	0754	-0.6	-18		0839	-1.5	-46
	1451	4.9	149		1532	5.7	174
	1926	3.3	101		2046	2.7	82
14 M	0111	6.2	189	29 Tu	0227	6.5	198
	0834	-0.4	-12		0931	-0.9	-27
	1540	4.8	146		1626	5.8	177
	2017	3.4	104		2157	2.6	79
15 Tu	0157	5.9	180	30 W	0333	5.7	174
	0921	-0.2	-6		1024	-0.2	-6
	1629	4.9	149		1718	5.9	180
	2120	3.4	104		2315	2.3	70
				31 Th	0443	5.1	155
					1115	0.5	15
					1807	6.0	183

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0028	1.9	58	16 Sa	0451	4.7	143
	0605	4.6	140		1054	1.1	34
	1207	1.2	37		1744	6.5	198
	1851	6.2	189				
2 Sa	0134	1.3	40	17 Su	0028	1.3	40
	0726	4.4	134		0619	4.4	134
	1259	1.8	55		1146	1.7	52
	1931	6.3	192		1827	6.9	210
3 Su	0230	0.7	21	18 M	0131	0.4	12
	0840	4.4	134		0743	4.5	137
	1345	2.3	70		1245	2.2	67
	2006	6.5	198		1915	7.3	223
4 M	0315	0.2	6	19 Tu	0230	-0.5	-15
	0940	4.5	137		0901	4.7	143
	1430	2.7	82		1344	2.6	79
	2042	6.5	198		2005	7.7	235
5 Tu	0354	-0.2	-6	20 W	0325	-1.3	-40
	1034	4.7	143		1005	5.0	152
	1515	2.9	88		1446	2.8	85
	2117	6.6	201		2055	8.0	244
6 W	0433	-0.6	-18	21 Th	0418	-1.9	-58
	1119	4.9	149		1103	5.4	165
	1554	3.1	94		1543	2.9	88
	2149	6.7	204		2148	8.2	250
7 Th	0508	-0.8	-24	22 F	0506	-2.3	-70
	1157	5.0	152		1156	5.6	171
	1636	3.2	98		1641	2.8	85
	2225	6.8	207		2237	8.2	250
8 F	0544	-1.0	-30	23 Sa	0554	-2.3	-70
	1233	5.1	155		1241	5.8	177
	1713	3.2	98		1736	2.7	82
	2301	6.8	207		2332	8.0	244
9 Sa	0619	-1.0	-30	24 Su	0642	-2.1	-64
	1312	5.1	155		1327	6.0	183
	1752	3.3	101		1832	2.6	79
	2339	6.7	204				
10 Su	0655	-1.0	-30	25 M	0024	7.6	232
	1351	5.2	158		0728	-1.7	-52
	1834	3.3	101		1412	6.1	186
					1929	2.5	76
11 M	0017	6.6	201	26 Tu	0116	7.1	216
	0731	-0.9	-27		0812	-1.1	-34
	1428	5.3	162		1457	6.2	189
	1917	3.3	101		2029	2.4	73
12 Tu	0056	6.4	195	27 W	0209	6.3	192
	0809	-0.7	-21		0855	-0.4	-12
	1508	5.4	165		1542	6.3	192
	2007	3.2	98		2135	2.2	67
13 W	0141	6.1	186	28 Th	0309	5.6	171
	0848	-0.4	-12		0937	0.4	12
	1545	5.5	168		1624	6.3	192
	2107	3.0	91		2241	2.0	61
14 Th	0231	5.6	171	29 F	0417	4.9	149
	0927	0.0	0		1019	1.2	37
	1624	5.8	177		1707	6.3	192
	2210	2.6	79		2350	1.6	49
15 F	0336	5.1	155	30 Sa	0533	4.3	131
	1010	0.5	15		1104	1.9	58
	1702	6.1	186		1749	6.4	195
	2319	2.1	64				

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

CRESCENT CITY, CALIFORNIA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0056	1.2	37	16 M	0003	0.7	21
	0700	4.1	125		0612	4.4	134
	1154	2.6	79		1107	2.5	76
	1832	6.4	195		1745	7.2	219
2 M	0157	0.8	24	17 Tu	0112	0.1	3
	0824	4.2	128		0747	4.4	134
	1249	3.1	94		1210	3.0	91
	1918	6.4	195		1842	7.5	229
3 Tu	0246	0.3	9	18 W	0217	-0.6	-18
	0933	4.4	134		0900	4.7	143
	1348	3.4	104		1325	3.2	98
	2000	6.5	198		1941	7.7	235
4 W	0331	-0.1	-3	19 Th	0314	-1.1	-34
	1025	4.7	143		1004	5.1	155
	1443	3.5	107		1434	3.2	98
	2042	6.7	204		2042	7.9	241
5 Th	0411	-0.4	-12	20 F	0405	-1.5	-46
	1106	4.9	149		1052	5.5	168
	1530	3.5	107		1537	3.0	91
	2125	6.8	207		2139	8.0	244
6 F	0449	-0.6	-18	21 Sa	0455	-1.7	-52
	1142	5.1	155		1137	5.8	177
	1614	3.4	104		1636	2.8	85
	2206	6.9	210		2234	8.0	244
7 Sa	0526	-0.8	-24	22 Su	0539	-1.7	-52
	1216	5.3	162		1218	6.1	186
	1656	3.3	101		1729	2.4	73
	2245	7.0	213		2324	7.8	238
8 Su	0558	-0.9	-27	23 M	0621	-1.4	-43
	1248	5.4	165		1257	6.3	192
	1738	3.2	98		1823	2.2	67
	2324	7.0	213				
9 M	0632	-0.9	-27	24 Tu	0015	7.4	226
	1318	5.6	171		0701	-1.0	-30
	1818	3.0	91		1335	6.5	198
					1911	2.0	61
10 Tu	0005	6.9	210	25 W	0101	6.9	210
	0706	-0.8	-24		0738	-0.4	-12
	1350	5.8	177		1412	6.6	201
	1903	2.8	85		2004	1.8	55
11 W	0047	6.7	204	26 Th	0153	6.2	189
	0740	-0.6	-18		0815	0.4	12
	1422	6.0	183		1449	6.6	201
	1953	2.6	79		2058	1.7	52
12 Th	0129	6.2	189	27 F	0246	5.5	168
	0815	-0.1	-3		0851	1.2	37
	1457	6.3	192		1524	6.5	198
	2046	2.2	67		2157	1.6	49
13 F	0225	5.7	174	28 Sa	0346	4.8	146
	0847	0.4	12		0929	1.9	58
	1529	6.5	198		1601	6.4	195
	2145	1.8	55		2301	1.5	46
14 Sa	0324	5.1	155	29 Su	0503	4.4	134
	0926	1.1	34		1008	2.6	79
	1608	6.8	207		1644	6.3	192
	2253	1.3	40				
15 Su	0443	4.6	140	30 M	0006	1.3	40
	1011	1.8	55		0635	4.1	125
	1653	7.0	213		1057	3.2	98
					1733	6.3	192
				31 Tu	0112	1.0	30
					0809	4.2	128
					1159	3.6	110
					1829	6.3	192

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0211	0.7	21	16 Th	0201	-0.4	-12
	0914	4.5	137		0855	5.0	152
	1315	3.8	116		1327	3.5	107
	1925	6.4	195		1936	7.4	226
2 Th	0303	0.3	9	17 F	0301	-0.7	-21
	1003	4.8	146		0951	5.4	165
	1418	3.7	113		1440	3.2	98
	2018	6.6	201		2041	7.5	229
3 F	0345	0.0	0	18 Sa	0351	-0.9	-27
	1037	5.0	152		1033	5.8	177
	1511	3.5	107		1540	2.7	82
	2105	6.8	207		2137	7.6	232
4 Sa	0423	-0.3	-9	19 Su	0436	-0.9	-27
	1109	5.3	162		1108	6.2	189
	1557	3.3	101		1633	2.2	67
	2150	7.0	213		2229	7.6	232
5 Su	0457	-0.5	-15	20 M	0516	-0.8	-24
	1138	5.6	171		1143	6.5	198
	1639	2.9	88		1720	1.8	55
	2229	7.2	219		2318	7.4	226
6 M	0532	-0.6	-18	21 Tu	0554	-0.4	-12
	1207	5.9	180		1217	6.7	204
	1718	2.6	79		1804	1.5	46
	2311	7.2	219				
7 Tu	0601	-0.6	-18	22 W	0003	7.0	213
	1234	6.2	189		0629	0.1	3
	1800	2.2	67		1247	6.8	207
	2353	7.1	216		1851	1.2	37
8 W	0633	-0.4	-12	23 Th	0050	6.5	198
	1303	6.5	198		0702	0.7	21
	1846	1.9	58		1319	6.8	207
					1935	1.1	34
9 Th	0036	6.8	207	24 F	0136	6.0	183
	0705	0.0	0		0733	1.4	43
	1332	6.7	204		1351	6.8	207
	1933	1.5	46		2020	1.1	34
10 F	0124	6.3	192	25 Sa	0226	5.4	165
	0738	0.6	18		0805	2.1	64
	1404	7.0	213		1423	6.6	201
	2023	1.2	37		2109	1.1	34
11 Sa	0221	5.7	174	26 Su	0323	4.9	149
	0815	1.2	37		0837	2.7	82
	1443	7.1	216		1459	6.4	195
	2122	0.9	27		2204	1.2	37
12 Su	0324	5.2	158	27 M	0432	4.5	137
	0854	2.0	61		0916	3.2	98
	1524	7.2	219		1541	6.2	189
	2225	0.6	18		2310	1.3	40
13 M	0443	4.7	143	28 Tu	0603	4.3	131
	0942	2.6	79		1011	3.7	113
	1615	7.2	219		1633	6.0	183
	2340	0.3	9				
14 Tu	0619	4.5	137	29 W	0023	1.2	37
	1045	3.2	98		0739	4.4	134
	1717	7.2	219		1130	3.9	119
					1743	6.0	183
15 W	0053	0.0	0	30 Th	0128	1.0	30
	0749	4.7	143		0842	4.7	143
	1204	3.5	107		1254	3.9	119
	1827	7.2	219		1851	6.1	186
				31 F	0224	0.7	21
					0924	5.0	152
					1400	3.6	110
					1955	6.3	192

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0307	0.3	9	16 Su	0327	-0.1	-3
	0956	5.3	162		0959	6.3	192
	1453	3.2	98		1539	2.0	61
	2046	6.6	201		2135	7.0	213
2 Su	0346	0.1	3	17 M	0409	0.1	3
	1021	5.7	174		1031	6.6	201
	1539	2.8	85		1626	1.4	43
	2132	6.9	210		2225	6.9	210
3 M	0421	-0.1	-3	18 Tu	0447	0.4	12
	1049	6.1	186		1103	6.9	210
	1621	2.2	67		1708	1.0	30
	2215	7.0	213		2313	6.7	204
4 Tu	0453	-0.1	-3	19 W	0519	0.8	24
	1116	6.4	195		1131	7.0	213
	1701	1.6	49		1748	0.6	18
	2300	7.1	216		2357	6.5	198
5 W	0525	0.1	3	20 Th	0553	1.3	40
	1144	6.8	207		1158	7.1	216
	1742	1.1	34		1824	0.4	12
	2345	6.9	210				
6 Th	0557	0.4	12	21 F	0040	6.1	186
	1211	7.2	219		0622	1.8	55
	1827	0.6	18		1226	7.0	213
					1906	0.3	9
7 F	0032	6.6	201	22 Sa	0122	5.8	177
	0632	0.9	27		0652	2.4	73
	1245	7.4	226		1256	6.8	207
	1912	0.2	6		1946	0.4	12
8 Sa	0124	6.2	189	23 Su	0212	5.4	165
	0707	1.5	46		0726	2.9	88
	1319	7.5	229		1324	6.6	201
	2005	0.0	0		2030	0.6	18
9 Su	0222	5.7	174	24 M	0305	5.0	152
	0746	2.2	67		0801	3.3	101
	1401	7.5	229		1400	6.3	192
	2100	-0.1	-3		2118	0.8	24
10 M	0329	5.3	162	25 Tu	0411	4.8	146
	0831	2.8	85		0838	3.7	113
	1447	7.3	223		1445	6.1	186
	2206	0.0	0		2218	1.1	34
11 Tu	0449	4.9	149	26 W	0534	4.6	140
	0930	3.3	101		0942	4.0	122
	1546	7.1	216		1541	5.8	177
	2320	0.0	0		2329	1.1	34
12 W	0620	4.9	149	27 Th	0653	4.7	143
	1046	3.6	110		1109	4.1	125
	1659	6.9	210		1653	5.7	174
13 Th	0034	0.0	0	28 F	0035	1.1	34
	0737	5.1	155		0749	5.0	152
	1220	3.6	110		1237	3.8	116
	1818	6.8	207		1813	5.7	174
14 F	0144	-0.1	-3	29 Sa	0132	0.9	27
	0833	5.5	168		0828	5.3	162
	1341	3.2	98		1339	3.4	104
	1934	6.8	207		1920	5.9	180
15 Sa	0240	-0.1	-3	30 Su	0218	0.7	21
	0920	5.9	180		0858	5.7	174
	1447	2.6	79		1433	2.8	85
	2039	6.9	210		2021	6.2	189

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0257	0.6	18	16 Tu	0335	1.2	37
	0927	6.2	189		0949	7.0	213
	1517	2.0	61		1615	0.7	21
	2109	6.4	195		2224	6.1	186
2 Tu	0333	0.6	18	17 W	0410	1.6	49
	0956	6.6	201		1019	7.2	219
	1559	1.2	37		1654	0.2	6
	2202	6.6	201		2309	6.1	186
3 W	0410	0.8	24	18 Th	0442	2.0	61
	1022	7.1	216		1045	7.2	219
	1641	0.5	15		1729	-0.1	-3
	2250	6.7	204		2352	6.0	183
4 Th	0443	1.1	34	19 F	0518	2.4	73
	1054	7.5	229		1114	7.2	219
	1723	-0.2	-6		1805	-0.2	-6
	2339	6.6	201				
5 F	0521	1.5	46	20 Sa	0034	5.8	177
	1128	7.8	238		0546	2.8	85
	1808	-0.8	-24		1142	7.1	216
					1840	-0.2	-6
6 Sa	0032	6.5	198	21 Su	0119	5.7	174
	0600	1.9	58		0621	3.2	98
	1205	8.0	244		1210	6.9	210
	1856	-1.0	-30		1918	-0.1	-3
7 Su	0126	6.2	189	22 M	0205	5.4	165
	0642	2.4	73		0653	3.5	107
	1244	8.0	244		1242	6.7	204
	1946	-1.0	-30		1957	0.2	6
8 M	0225	5.8	177	23 Tu	0254	5.2	158
	0727	2.9	88		0732	3.7	113
	1330	7.7	235		1317	6.4	195
	2044	-0.8	-24		2044	0.4	12
9 Tu	0331	5.5	168	24 W	0349	5.1	155
	0823	3.3	101		0821	4.0	122
	1423	7.4	226		1359	6.1	186
	2147	-0.5	-15		2137	0.7	21
10 W	0447	5.4	165	25 Th	0455	5.0	152
	0935	3.6	110		0921	4.1	125
	1529	6.9	210		1457	5.8	177
	2259	-0.1	-3		2233	0.9	27
11 Th	0603	5.5	168	26 F	0554	5.2	158
	1102	3.6	110		1045	4.0	122
	1646	6.4	195		1607	5.5	168
					2333	1.0	30
12 F	0007	0.1	3	27 Sa	0646	5.4	165
	0710	5.7	174		1208	3.7	113
	1230	3.3	101		1727	5.4	165
	1813	6.2	189				
13 Sa	0112	0.4	12	28 Su	0027	1.1	34
	0800	6.1	186		0726	5.8	177
	1345	2.6	79		1312	3.1	94
	1928	6.1	186		1846	5.4	165
14 Su	0205	0.6	18	29 M	0115	1.2	37
	0842	6.5	198		0757	6.2	189
	1445	1.9	58		1409	2.2	67
	2038	6.1	186		1955	5.6	171
15 M	0253	0.9	27	30 Tu	0200	1.4	43
	0917	6.8	207		0829	6.8	207
	1533	1.3	40		1454	1.3	40
	2133	6.2	189		2054	5.8	177
				31 W	0244	1.6	49
					0903	7.3	223
					1536	0.3	9
					2151	6.1	186

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0326	1.8	55	16 F	0410	3.1	94
	0935	7.8	238		1007	7.4	226
	1622	-0.6	-18		1711	-0.4	-12
	2245	6.3	192		2353	5.7	174
2 F	0407	2.1	64	17 Sa	0445	3.3	101
	1012	8.2	250		1036	7.3	223
	1707	-1.3	-40		1746	-0.5	-15
	2336	6.3	192				
3 Sa	0449	2.4	73	18 Su	0032	5.7	174
	1051	8.4	256		0521	3.5	107
	1753	-1.7	-52		1108	7.2	219
					1821	-0.4	-12
4 Su	0032	6.3	192	19 M	0114	5.7	174
	0534	2.8	85		0559	3.7	113
	1133	8.5	259		1141	7.1	216
	1842	-1.8	-55		1858	-0.3	-9
5 M	0127	6.2	189	20 Tu	0153	5.6	171
	0623	3.1	94		0635	3.8	116
	1220	8.3	253		1216	6.9	210
	1934	-1.6	-49		1937	-0.1	-3
6 Tu	0223	6.1	186	21 W	0238	5.5	168
	0715	3.3	101		0717	4.0	122
	1310	7.9	241		1255	6.7	204
	2028	-1.2	-37		2016	0.1	3
7 W	0326	6.0	183	22 Th	0324	5.5	168
	0821	3.5	107		0804	4.0	122
	1409	7.4	226		1337	6.4	195
	2126	-0.7	-21		2100	0.4	12
8 Th	0428	6.0	183	23 F	0409	5.6	171
	0936	3.5	107		0907	4.0	122
	1515	6.7	204		1422	6.0	183
	2228	-0.1	-3		2142	0.7	21
9 F	0530	6.1	186	24 Sa	0456	5.7	174
	1102	3.3	101		1016	3.8	116
	1634	6.1	186		1528	5.6	171
	2331	0.5	15		2232	1.0	30
10 Sa	0626	6.3	192	25 Su	0540	6.0	183
	1224	2.8	85		1131	3.4	104
	1800	5.6	171		1645	5.2	158
					2320	1.4	43
11 Su	0027	1.0	30	26 M	0619	6.4	195
	0715	6.6	201		1241	2.6	79
	1334	2.1	64		1810	5.0	152
	1920	5.4	165				
12 M	0122	1.5	46	27 Tu	0010	1.8	55
	0757	6.9	210		0654	6.8	207
	1433	1.4	43		1337	1.7	52
	2032	5.4	165		1929	5.1	155
13 Tu	0211	2.0	61	28 W	0101	2.2	67
	0834	7.1	216		0733	7.3	223
	1520	0.7	21		1429	0.7	21
	2131	5.5	168		2043	5.3	162
14 W	0253	2.4	73	29 Th	0153	2.5	76
	0906	7.3	223		0813	7.8	238
	1600	0.2	6		1517	-0.3	-9
	2226	5.6	171		2146	5.6	171
15 Th	0335	2.8	85	30 F	0245	2.8	85
	0935	7.4	226		0856	8.3	253
	1638	-0.1	-3		1606	-1.1	-34
	2311	5.7	174		2244	5.9	180

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0334	3.0	91	16 Su	0424	3.9	119
	0940	8.6	262		1012	7.4	226
	1652	-1.7	-52		1731	-0.4	-12
	2336	6.2	189				
2 Su	0426	3.2	98	17 M	0029	5.8	177
	1026	8.8	268		0503	3.9	119
	1741	-2.0	-61		1050	7.4	226
					1806	-0.5	-15
3 M	0027	6.3	192	18 Tu	0102	5.8	177
	0519	3.3	101		0542	3.9	119
	1117	8.8	268		1126	7.3	223
	1829	-2.0	-61		1841	-0.4	-12
4 Tu	0119	6.4	195	19 W	0134	5.9	180
	0611	3.3	101		0621	3.8	116
	1206	8.5	259		1201	7.2	219
	1919	-1.8	-55		1917	-0.3	-9
5 W	0211	6.4	195	20 Th	0209	6.0	183
	0709	3.3	101		0703	3.8	116
	1258	8.0	244		1239	7.0	213
	2009	-1.2	-37		1949	-0.1	-3
6 Th	0300	6.5	198	21 F	0247	6.1	186
	0815	3.3	101		0750	3.7	113
	1357	7.4	226		1319	6.6	201
	2100	-0.6	-18		2025	0.2	6
7 F	0352	6.6	201	22 Sa	0320	6.2	189
	0926	3.1	94		0845	3.6	110
	1500	6.6	201		1407	6.2	189
	2153	0.2	6		2100	0.6	18
8 Sa	0446	6.7	204	23 Su	0355	6.4	195
	1043	2.9	88		0944	3.3	101
	1613	5.8	177		1503	5.6	171
	2241	1.0	30		2139	1.2	37
9 Su	0536	6.9	210	24 M	0434	6.7	204
	1202	2.4	73		1053	2.8	85
	1735	5.2	158		1616	5.1	155
	2337	1.7	52		2221	1.8	55
10 M	0622	7.0	213	25 Tu	0512	7.0	213
	1310	1.8	55		1202	2.1	64
	1904	4.9	149		1741	4.8	146
					2309	2.4	73
11 Tu	0029	2.4	73	26 W	0556	7.3	223
	0706	7.1	216		1308	1.2	37
	1410	1.2	37		1916	4.8	146
	2025	4.9	149				
12 W	0121	3.0	91	27 Th	0005	2.9	88
	0747	7.2	219		0644	7.7	235
	1459	0.6	18		1406	0.3	9
	2133	5.1	155		2036	5.0	152
13 Th	0210	3.4	104	28 F	0111	3.3	101
	0824	7.3	223		0735	8.1	247
	1541	0.2	6		1502	-0.5	-15
	2226	5.3	162		2147	5.4	165
14 F	0302	3.7	113	29 Sa	0213	3.6	110
	0901	7.3	223		0827	8.5	259
	1620	-0.1	-3		1554	-1.2	-37
	2312	5.5	168		2240	5.8	177
15 Sa	0345	3.8	116	30 Su	0315	3.6	110
	0936	7.4	226		0921	8.7	265
	1657	-0.3	-9		1643	-1.7	-52
	2348	5.7	174		2329	6.2	189
				31 M	0415	3.4	104
					1013	8.9	271
					1729	-1.9	-58

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ASTORIA (Tongue Pt.), OREGON, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0423	8.2	250	16 Tu	0457	8.5	259
	1007	2.9	88		1108	2.4	73
	1544	8.5	259		1647	7.3	223
	2223	0.2	6		2302	1.5	46
2 Tu	0500	8.5	259	17 W	0530	8.5	259
	1100	2.6	79		1159	2.3	70
	1639	7.8	238		1745	6.6	201
	2305	0.8	24		2337	2.2	67
3 W	0539	8.7	265	18 Th	0606	8.4	256
	1201	2.3	70		1258	2.1	64
	1745	7.1	216		1854	6.1	186
	2347	1.6	49				
4 Th	0625	9.0	274	19 F	0019	2.9	88
	1311	1.8	55		0645	8.4	256
	1908	6.5	198		1404	1.9	58
					2012	5.8	177
5 F	0040	2.4	73	20 Sa	0111	3.6	110
	0715	9.2	280		0734	8.3	253
	1427	1.2	37		1509	1.5	46
	2036	6.2	189		2132	5.9	180
6 Sa	0145	3.1	94	21 Su	0217	4.0	122
	0811	9.4	287		0827	8.3	253
	1539	0.5	15		1612	1.1	34
	2158	6.4	195		2237	6.2	189
7 Su	0254	3.5	107	22 M	0323	4.2	128
	0911	9.6	293		0923	8.4	256
	1642	-0.2	-6		1706	0.6	18
	2309	6.8	207		2330	6.6	201
8 M	0403	3.7	113	23 Tu	0426	4.2	128
	1010	9.7	296		1017	8.6	262
	1741	-0.7	-21		1752	0.1	3
9 Tu	0007	7.2	219	24 W	0018	6.9	210
	0512	3.7	113		0519	4.0	122
	1106	9.8	299		1106	8.9	271
	1833	-1.1	-34		1833	-0.2	-6
10 W	0059	7.6	232	25 Th	0057	7.3	223
	0610	3.5	107		0610	3.7	113
	1200	9.9	302		1151	9.1	277
	1922	-1.2	-37		1911	-0.5	-15
11 Th	0148	7.9	241	26 F	0136	7.6	232
	0706	3.2	98		0657	3.3	101
	1252	9.8	299		1237	9.3	283
	2005	-1.1	-34		1946	-0.6	-18
12 F	0230	8.2	250	27 Sa	0211	8.0	244
	0757	3.0	91		0739	2.9	88
	1341	9.5	290		1322	9.3	283
	2045	-0.9	-27		2018	-0.6	-18
13 Sa	0309	8.4	256	28 Su	0243	8.3	253
	0845	2.7	82		0823	2.5	76
	1427	9.1	277		1405	9.2	280
	2123	-0.4	-12		2050	-0.4	-12
14 Su	0347	8.5	259	29 M	0315	8.6	262
	0932	2.6	79		0905	2.0	61
	1512	8.6	262		1453	8.9	271
	2155	0.1	3		2122	0.0	0
15 M	0422	8.5	259	30 Tu	0343	8.9	271
	1020	2.5	76		0952	1.6	49
	1559	8.0	244		1543	8.3	253
	2230	0.8	24		2157	0.5	15
				31 W	0419	9.2	280
					1044	1.3	40
					1636	7.6	232
					2233	1.2	37

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0456	9.3	283	16 F	0457	8.4	256
	1140	1.2	37		1202	1.5	46
	1743	6.8	207		1816	6.0	183
	2318	2.0	61		2323	3.1	94
2 F	0540	9.3	283	17 Sa	0536	8.2	250
	1246	1.0	30		1301	1.6	49
	1901	6.2	189		1930	5.6	171
3 Sa	0010	2.9	88	18 Su	0012	3.7	113
	0635	9.2	280		0622	8.0	244
	1405	0.8	24		1417	1.5	46
	203i	6.0	183		2052	5.6	171
4 Su	0119	3.5	107	19 M	0124	4.1	125
	0738	9.0	274		0727	7.8	238
	1524	0.4	12		1528	1.2	37
	2153	6.2	189		2202	5.9	180
5 M	0242	3.9	119	20 Tu	0245	4.2	128
	0851	8.9	271		0839	7.8	238
	1634	0.0	0		1629	0.8	24
	2303	6.7	204		2301	6.4	195
6 Tu	0400	3.8	116	21 W	0358	4.0	122
	1000	9.0	274		0949	8.1	247
	1733	-0.4	-12		1718	0.3	9
	2355	7.2	219		2343	6.8	207
7 W	0509	3.4	104	22 Th	0458	3.5	107
	1103	9.1	277		1045	8.4	256
	1822	-0.7	-21		1800	0.0	0
8 Th	0044	7.7	235	23 F	0021	7.3	223
	0606	2.9	88		0551	2.9	88
	1158	9.2	280		1139	8.7	265
	1905	-0.8	-24		1839	-0.3	-9
9 F	0124	8.1	247	24 Sa	0057	7.8	238
	0659	2.5	76		0636	2.3	70
	1247	9.2	280		1226	8.9	271
	1943	-0.7	-21		1913	-0.4	-12
10 Sa	0201	8.4	256	25 Su	0129	8.3	253
	0746	2.1	64		0723	1.6	49
	1333	9.0	274		1313	9.0	274
	2018	-0.4	-12		1947	-0.3	-9
11 Su	0234	8.6	262	26 M	0201	8.7	265
	0828	1.8	55		0806	1.0	30
	1415	8.7	265		1402	8.8	268
	2050	0.0	0		2021	0.0	0
12 M	0305	8.7	265	27 Tu	0232	9.1	277
	0910	1.6	49		0850	0.5	15
	1458	8.2	250		1450	8.5	259
	2119	0.6	18		2055	0.5	15
13 Tu	0333	8.7	265	28 W	0305	9.4	287
	0949	1.4	43		0937	0.1	3
	1540	7.7	235		1540	7.9	241
	2147	1.2	37		2132	1.1	34
14 W	0359	8.7	265				
	1031	1.4	43				
	1624	7.1	216				
	2214	1.8	55				
15 Th	0425	8.6	262				
	1113	1.4	43				
	1713	6.5	198				
	2245	2.5	76				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0340	9.5	290	16 F	0332	8.5	259
	1026	0.0	0		1031	0.6	18
	1636	7.3	223		1652	6.4	195
	2211	1.8	55		2209	2.8	85
2 F	0420	9.5	290	17 Sa	0401	8.3	253
	1121	0.1	3		1113	0.8	24
	1739	6.6	201		1749	6.0	183
	2256	2.5	76		2247	3.2	98
3 Sa	0505	9.1	277	18 Su	0439	8.0	244
	1230	0.3	9		1205	1.1	34
	1900	6.1	186		1856	5.7	174
	2355	3.2	98		2336	3.7	113
4 Su	0605	8.7	265	19 M	0531	7.7	235
	1346	0.5	15		1317	1.3	40
	2022	6.0	183		2010	5.6	171
5 M	0114	3.7	113	20 Tu	0046	4.0	122
	0720	8.2	250		0641	7.4	226
	1507	0.4	12		1433	1.2	37
	2141	6.3	192		2119	5.9	180
6 Tu	0243	3.7	113	21 W	0217	3.9	119
	0843	8.1	247		0803	7.3	223
	1616	0.1	3		1540	0.9	27
	2242	6.8	207		2216	6.4	195
7 W	0400	3.3	101	22 Th	0333	3.5	107
	0958	8.2	250		0919	7.5	229
	1712	-0.1	-3		1632	0.6	18
	2333	7.4	226		2258	7.0	213
8 Th	0507	2.7	82	23 F	0434	2.8	85
	1101	8.3	253		1025	7.8	238
	1757	-0.3	-9		1716	0.3	9
					2336	7.6	232
9 F	0013	7.9	241	24 Sa	0527	1.9	58
	0600	2.0	61		1122	8.2	250
	1153	8.4	256		1756	0.2	5
	1837	-0.2	-6				
10 Sa	0050	8.2	250	25 Su	0011	8.1	247
	0645	1.5	46		0616	1.1	34
	1239	8.4	256		1215	8.4	256
	1911	0.0	0		1835	0.2	6
11 Su	0122	8.5	259	26 M	0043	8.7	265
	0731	1.0	30		0702	0.2	6
	1323	8.3	253		1305	8.4	256
	1943	0.3	9		1911	0.5	15
12 M	0152	8.6	262	27 Tu	0116	9.2	280
	0809	0.7	21		0749	-0.5	-15
	1403	8.0	244		1354	8.3	253
	2012	0.8	24		1949	0.8	24
13 Tu	0218	8.7	265	28 W	0151	9.5	290
	0845	0.5	15		0833	-0.9	-27
	1445	7.7	235		1447	8.0	244
	2041	1.3	40		2028	1.3	40
14 W	0242	8.7	265	29 Th	0227	9.7	296
	0920	0.4	12		0921	-1.1	-34
	1524	7.3	223		1539	7.6	232
	2109	1.8	55		2109	1.8	55
15 Th	0308	8.6	262	30 F	0306	9.6	293
	0954	0.4	12		1012	-1.0	-30
	1606	6.9	210		1636	7.0	213
	2137	2.3	70		2155	2.4	73
				31 Sa	0351	9.3	283
					1108	-0.6	-18
					1742	6.6	201
					2247	2.9	88

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Su	0444	8.7	265	16 M	0407	7.9	241
	1214	-0.1	-3		1126	0.6	18
	1851	6.3	192		1825	6.0	183
	2356	3.3	101		2315	3.6	110
2 M	0549	8.1	247	17 Tu	0456	7.5	229
	1325	0.2	6		1226	0.8	24
	2007	6.4	195		1931	6.0	183
3 Tu	0119	3.5	107	18 W	0027	3.7	113
	0711	7.5	229		0605	7.2	219
	1439	0.4	12		1334	0.9	27
	2115	6.7	204		2030	6.3	192
4 W	0243	3.2	98	19 Th	0150	3.5	107
	0837	7.3	223		0731	6.9	210
	1544	0.4	12		1438	0.9	27
	2210	7.2	219		2120	6.8	207
5 Th	0357	2.5	76	20 F	0307	2.9	88
	0950	7.4	226		0851	7.0	213
	1638	0.4	12		1534	0.9	27
	2256	7.7	235		2204	7.4	226
6 F	0456	1.8	55	21 Sa	0409	2.0	61
	1050	7.5	229		1000	7.2	219
	1721	0.4	12		1625	0.9	27
	2336	8.2	250		2243	8.1	247
7 Sa	0546	1.1	34	22 Su	0504	0.9	27
	1141	7.6	232		1103	7.5	229
	1800	0.6	18		1707	1.0	30
					2320	8.7	265
8 Su	0007	8.4	256	23 M	0554	0.0	0
	0630	0.5	15		1201	7.7	235
	1228	7.7	235		1752	1.2	37
	1835	0.9	27		2357	9.2	280
9 M	0039	8.6	262	24 Tu	0642	-0.9	-27
	0709	0.1	3		1255	7.8	238
	1310	7.6	232		1836	1.5	46
	1907	1.3	40				
10 Tu	0107	8.7	265	25 W	0035	9.6	293
	0746	-0.2	-6		0732	-1.5	-46
	1352	7.5	229		1351	7.7	235
	1937	1.7	52		1920	1.8	55
11 W	0132	8.6	262	26 Th	0114	9.8	299
	0821	-0.3	-9		0819	-1.8	-55
	1433	7.3	223		1443	7.6	232
	2007	2.1	64		2005	2.2	67
12 Th	0157	8.6	262	27 F	0158	9.8	299
	0853	-0.3	-9		0909	-1.8	-55
	1511	7.0	213		1538	7.4	226
	2036	2.5	76		2054	2.5	76
13 F	0221	8.5	259	28 Sa	0242	9.5	290
	0926	-0.2	-6		1001	-1.5	-46
	1554	6.7	204		1633	7.1	216
	2108	2.8	85		2146	2.8	85
14 Sa	0249	8.4	256	29 Su	0332	9.0	274
	1002	0.0	0		1054	-1.0	-30
	1636	6.4	195		1733	6.9	210
	2143	3.1	94		2247	3.0	91
15 Su	0325	8.2	250	30 M	0431	8.4	256
	1039	0.3	9		1154	-0.4	-12
	1729	6.1	186		1835	6.8	207
	2225	3.4	104		2355	3.2	98

MAY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Tu	0537	7.6	232	16 W	0437	7.5	229
	1257	0.1	3		1147	0.4	12
	1938	7.0	213		1845	6.7	204
2 W	0112	3.0	91	17 Th	0012	3.3	101
	0659	7.1	216		0543	7.0	213
	1400	0.5	15		1243	0.7	21
	2037	7.3	223		1934	7.0	213
3 Th	0229	2.6	79	18 F	0125	2.9	88
	0818	6.8	207		0702	6.7	204
	1457	0.8	24		1339	1.0	30
	2128	7.7	235		2023	7.5	229
4 F	0338	1.9	58	19 Sa	0235	2.1	64
	0928	6.7	204		0825	6.5	198
	1550	1.1	34		1434	1.3	40
	2210	8.1	247		2107	8.1	247
5 Sa	0436	1.1	34	20 Su	0341	1.2	37
	1030	6.8	207		0941	6.6	201
	1655	1.3	40		1529	1.6	49
	2249	8.4	256		2153	8.7	265
6 Su	0522	0.5	15	21 M	0440	0.2	6
	1124	6.9	210		1048	6.8	207
	1715	1.6	49		1621	1.9	58
	2322	8.6	262		2234	9.2	280
7 M	0608	-0.1	-3	22 Tu	0535	-0.8	-24
	1212	7.0	213		1151	7.0	213
	1752	2.0	61		1713	2.2	67
	2354	8.6	262		2317	9.6	293
8 Tu	0646	-0.4	-12	23 W	0626	-1.5	-46
	1257	7.0	213		1249	7.2	219
	1828	2.3	70		1806	2.4	73
9 W	0021	8.6	262	24 Th	0002	9.8	299
	0722	-0.6	-18		0716	-1.9	-58
	1341	7.0	213		1344	7.3	223
	1903	2.6	79		1857	2.6	79
10 Th	0049	8.6	262	25 F	0049	9.9	302
	0757	-0.7	-21		0808	-2.1	-64
	1422	7.0	213		1437	7.4	226
	1938	2.9	88		1950	2.7	82
11 F	0120	8.6	262	26 Sa	0138	9.7	296
	0834	-0.7	-21		0858	-1.9	-58
	1501	6.9	210		1530	7.3	223
	2014	3.1	94		2045	2.8	85
12 Sa	0148	8.5	259	27 Su	0229	9.3	283
	0907	-0.5	-15		0948	-1.6	-49
	1543	6.7	204		1622	7.3	223
	2049	3.3	101		2141	2.8	85
13 Su	0224	8.4	256	28 M	0323	8.8	268
	0942	-0.4	-12		1038	-1.1	-34
	1625	6.6	201		1716	7.3	223
	2126	3.4	104		2241	2.8	85
14 M	0300	8.2	250	29 Tu	0420	8.1	247
	1018	-0.2	-6		1129	-0.5	-15
	1707	6.5	198		1806	7.4	226
	2212	3.5	107		2347	2.7	82
15 Tu	0345	7.9	241	30 W	0524	7.3	223
	1100	0.1	3		1219	0.2	6
	1753	6.5	198		1859	7.6	232
	2305	3.5	107				
				31 Th	0054	2.5	76
					0634	6.7	204
					1312	0.8	24
					1948	7.8	238

JUNE

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 F	0203	2.1	64	16 Sa	0100	2.1	64
	0750	6.3	192		0643	6.3	192
	1405	1.3	40		1246	1.1	34
	2035	8.0	244		1927	8.1	247
2 Sa	0312	1.5	46	17 Su	0209	1.4	43
	0902	6.1	186		0807	6.0	183
	1454	1.8	55		1344	1.7	52
	2118	8.2	250		2015	8.6	262
3 Su	0408	0.8	24	18 M	0315	0.5	15
	1008	6.2	189		0925	6.0	183
	1542	2.2	67		1443	2.2	67
	2158	8.4	256		2104	9.0	274
4 M	0457	0.2	6	19 Tu	0421	-0.4	-12
	1103	6.3	192		1038	6.2	189
	1629	2.6	79		1545	2.6	79
	2234	8.5	259		2157	9.3	283
5 Tu	0542	-0.3	-9	20 W	0519	-1.1	-34
	1156	6.5	198		1142	6.5	198
	1713	2.8	85		1646	2.8	85
	2309	8.5	259		2250	9.5	290
6 W	0623	-0.6	-18	21 Th	0615	-1.7	-52
	1242	6.6	201		1242	6.8	207
	1755	3.1	94		1747	2.9	88
	2344	8.5	259		2340	9.6	293
7 Th	0703	-0.8	-24	22 F	0708	-2.0	-61
	1325	6.7	204		1337	7.1	216
	1837	3.2	98		1844	2.8	85
8 F	0016	8.5	259	23 Sa	0034	9.6	293
	0740	-0.8	-24		0758	-2.0	-61
	1407	6.8	207		1420	7.3	223
	1916	3.3	101		1941	2.7	82
9 Sa	0052	8.5	259	24 Su	0127	9.4	287
	0816	-0.8	-24		0845	-1.9	-58
	1446	6.8	207		1514	7.5	229
	1956	3.3	101		2037	2.5	76
10 Su	0128	8.5	259	25 M	0219	9.0	274
	0850	-0.8	-24		0930	-1.5	-46
	1525	6.9	210		1559	7.6	232
	2037	3.3	101		2131	2.3	70
11 M	0208	8.4	256	26 Tu	0311	8.5	259
	0922	-0.7	-21		1012	-1.0	-30
	1603	6.9	210		1645	7.7	235
	2117	3.2	98		2227	2.2	67
12 Tu	0247	8.2	250	27 W	0407	7.8	238
	0957	-0.5	-15		1054	-0.4	-12
	1639	7.0	213		1727	7.8	238
	2202	3.1	94		2323	2.1	64
13 W	0333	7.9	241	28 Th	0502	7.1	216
	1033	-0.3	-9		1135	0.3	9
	1718	7.2	219		1809	7.9	241
	2255	2.9	88				
14 Th	0425	7.4	226	29 F	0022	1.9	58
	1113	0.1	3		0605	6.4	195
	1759	7.4	226		1217	1.1	34
	2355	2.6	79		1851	7.9	241
15 F	0527	6.9	210	30 Sa	0127	1.6	49
	1157	0.6	18		0715	5.8	177
	1841	7.8	238		1305	1.8	55
					1937	7.9	241

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ASTORIA (Tongue Pt.), OREGON, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0230	1.2	37	16 M	0144	0.6	18
	0829	5.6	171		0753	5.6	171
	1355	2.4	73		1305	2.2	67
	2020	8.0	244		1930	8.6	262
2 M	0332	0.7	21	17 Tu	0256	0.0	0
	0939	5.6	171		0918	5.6	171
	1450	2.8	85		1411	2.7	82
	2105	8.0	244		2030	8.7	265
3 Tu	0427	0.2	6	18 W	0405	-0.6	-18
	1043	5.8	177		1031	5.8	177
	1545	3.1	94		1523	3.0	91
	2147	8.1	247		2133	8.9	271
4 W	0517	-0.2	-6	19 Th	0508	-1.1	-34
	1135	6.1	186		1134	6.3	192
	1638	3.3	101		1635	3.0	91
	2233	8.2	250		2234	9.0	274
5 Th	0602	-0.5	-15	20 F	0605	-1.6	-49
	1225	6.3	192		1231	6.7	204
	1730	3.3	101		1739	2.7	82
	2315	8.2	250		2333	9.1	277
6 F	0642	-0.8	-24	21 Sa	0655	-1.8	-55
	1308	6.6	201		1318	7.1	216
	1815	3.2	98		1839	2.4	73
	2357	8.3	253				
7 Sa	0721	-0.9	-27	22 Su	0029	9.1	277
	1348	6.7	204		0743	-1.8	-55
	1858	3.1	94		1403	7.4	226
					1932	2.1	64
8 Su	0036	8.4	256	23 M	0121	8.9	271
	0756	-1.0	-30		0824	-1.6	-49
	1424	6.9	210		1447	7.6	232
	1941	2.9	88		2024	1.7	52
9 M	0118	8.4	256	24 Tu	0211	8.6	262
	0829	-1.0	-30		0903	-1.2	-37
	1459	7.1	216		1524	7.8	238
	2023	2.7	82		2114	1.5	46
10 Tu	0157	8.3	253	25 W	0259	8.0	244
	0901	-0.9	-27		0941	-0.7	-21
	1531	7.3	223		1602	7.9	241
	2106	2.5	76		2203	1.3	40
11 W	0239	8.1	247	26 Th	0348	7.4	226
	0931	-0.7	-21		1014	0.0	0
	1603	7.5	229		1635	8.0	244
	2148	2.1	64		2253	1.2	37
12 Th	0324	7.8	238	27 F	0439	6.7	204
	1003	-0.4	-12		1049	0.7	21
	1635	7.8	238		1710	7.9	241
	2236	1.8	55		2342	1.1	34
13 F	0416	7.2	219	28 Sa	0537	6.1	186
	1039	0.1	3		1124	1.4	43
	1710	8.0	244		1749	7.8	238
	2329	1.5	46				
14 Sa	0516	6.6	201	29 Su	0040	1.1	34
	1121	0.8	24		0640	5.5	168
	1751	8.3	253		1206	2.2	67
					1827	7.6	232
15 Su	0031	1.1	34	30 M	0144	1.0	30
	0632	5.9	180		0754	5.2	158
	1206	1.5	46		1258	2.8	85
	1837	8.5	259		1917	7.5	229
				31 Tu	0250	0.7	21
					0912	5.2	158
					1401	3.2	98
					2009	7.4	226

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0352	0.4	12	16 Th	0357	-0.6	-18
	1018	5.5	168		1026	5.8	177
	1508	3.4	104		1525	3.0	91
	2108	7.5	229		2125	8.2	250
2 Th	0448	0.0	0	17 F	0458	-1.0	-30
	1111	5.8	177		1122	6.4	195
	1612	3.3	101		1637	2.6	79
	2201	7.6	232		2232	8.4	256
3 F	0535	-0.4	-12	18 Sa	0551	-1.3	-40
	1159	6.2	189		1210	6.9	210
	1707	3.1	94		1738	2.1	64
	2253	7.9	241		2331	8.5	259
4 Sa	0616	-0.7	-21	19 Su	0636	-1.4	-43
	1237	6.5	198		1256	7.3	223
	1755	2.8	85		1831	1.5	46
	2339	8.1	247				
5 Su	0655	-0.9	-27	20 M	0025	8.5	259
	1316	6.8	207		0717	-1.3	-40
	1841	2.4	73		1334	7.7	235
					1921	1.1	34
6 M	0024	8.2	250	21 Tu	0113	8.3	253
	0729	-1.0	-30		0756	-1.0	-30
	1348	7.1	216		1409	7.9	241
	1923	2.0	61		2008	0.7	21
7 Tu	0106	8.3	253	22 W	0200	8.0	244
	0759	-1.0	-30		0828	-0.6	-18
	1420	7.4	226		1442	8.0	244
	2005	1.6	49		2053	0.5	15
8 W	0151	8.2	250	23 Th	0245	7.6	232
	0830	-0.8	-24		0903	0.0	0
	1451	7.7	235		1514	8.1	247
	2047	1.2	37		2135	0.4	12
9 Th	0233	7.9	241	24 F	0330	7.1	216
	0902	-0.5	-15		0932	0.6	18
	1519	8.0	244		1542	8.0	244
	2129	0.8	24		2215	0.4	12
10 F	0319	7.5	229	25 Sa	0415	6.5	198
	0934	0.0	0		1004	1.3	40
	1551	8.3	253		1609	7.8	238
	2215	0.5	15		2300	0.5	15
11 Sa	0412	6.9	210	26 Su	0508	5.9	180
	1007	0.6	18		1038	1.9	58
	1624	8.5	259		1640	7.6	232
	2307	0.3	9		2349	0.6	18
12 Su	0512	6.2	189	27 M	0608	5.4	165
	1049	1.3	40		1117	2.6	79
	1706	8.5	259		1718	7.3	223
13 M	0009	0.2	6	28 Tu	0048	0.8	24
	0624	5.6	171		0724	5.1	155
	1137	2.0	61		1209	3.1	94
	1756	8.4	256		1811	7.1	216
14 Tu	0122	0.1	3	29 W	0157	0.8	24
	0751	5.3	162		0836	5.1	155
	1239	2.7	82		1321	3.4	104
	1858	8.2	250		1915	6.9	210
15 W	0241	-0.2	-6	30 Th	0309	0.6	18
	0913	5.4	165		0945	5.4	165
	1402	3.0	91		1441	3.4	104
	2012	8.1	247		2029	6.9	210
				31 F	0412	0.3	9
					1040	5.8	177
					1548	3.1	94
					2136	7.1	216

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0458	-0.1	-3	16 Su	0527	-0.7	-21
	1123	6.3	192		1143	7.4	226
	1645	2.7	82		1735	1.3	40
	2234	7.5	229		2330	7.9	241
2 Su	0540	-0.4	-12	17 M	0607	-0.6	-18
	1200	6.7	204		1220	7.9	241
	1735	2.1	64		1822	0.6	18
	2323	7.8	238				
3 M	0616	-0.6	-18	18 Tu	0018	7.9	241
	1233	7.2	219		0646	-0.4	-12
	1820	1.5	46		1255	8.1	247
					1908	0.2	6
4 Tu	0012	8.0	244	19 W	0105	7.8	238
	0651	-0.6	-18		0721	0.0	0
	1305	7.6	232		1326	8.3	253
	1903	0.9	27		1949	-0.2	-6
5 W	0055	8.0	244	20 Th	0149	7.6	232
	0723	-0.5	-15		0751	0.5	15
	1334	8.0	244		1356	8.3	253
	1945	0.3	9		2028	-0.3	-9
6 Th	0140	7.9	241	21 F	0231	7.2	219
	0755	-0.2	-6		0823	1.0	30
	1405	8.4	256		1421	8.3	253
	2025	-0.2	-6		2104	-0.4	-12
7 F	0228	7.7	235	22 Sa	0314	6.9	210
	0830	0.2	6		0855	1.5	46
	1434	8.7	265		1447	8.1	247
	2110	-0.6	-18		2139	-0.2	-6
8 Sa	0316	7.3	223	23 Su	0356	6.5	198
	0905	0.7	21		0924	2.1	64
	1509	8.8	268		1514	7.9	241
	2156	-0.7	-21		2218	0.0	0
9 Su	0409	6.7	204	24 M	0443	6.0	183
	0942	1.3	40		0959	2.6	79
	1546	8.8	268		1545	7.7	235
	2248	-0.6	-18		2300	0.3	9
10 M	0513	6.1	186	25 Tu	0539	5.6	171
	1027	2.0	61		1039	3.0	91
	1631	8.6	262		1623	7.4	226
	2353	-0.4	-12		2355	0.6	18
11 Tu	0626	5.6	171	26 W	0645	5.4	165
	1123	2.6	79		1133	3.4	104
	1727	8.1	247		1713	7.0	213
12 W	0106	-0.2	-6	27 Th	0101	0.9	27
	0747	5.5	168		0757	5.4	165
	1239	3.1	94		1246	3.6	110
	1840	7.7	235		1827	6.7	204
13 Th	0227	-0.2	-6	28 F	0216	0.9	27
	0905	5.8	177		0904	5.7	174
	1407	3.1	94		1411	3.5	107
	2006	7.5	229		1950	6.6	201
14 F	0339	-0.3	-9	29 Sa	0320	0.7	21
	1007	6.3	192		0955	6.2	189
	1529	2.7	82		1523	3.0	91
	2125	7.6	232		2106	6.8	207
15 Sa	0438	-0.6	-18	30 Su	0410	0.4	12
	1101	6.9	210		1037	6.7	204
	1637	2.0	61		1621	2.3	70
	2232	7.8	238		2210	7.1	216

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 M	0453	0.2	6	16 Tu	0533	0.5	15
	1112	7.3	223		1141	8.5	259
	1711	1.4	43		1807	0.0	0
	2304	7.5	229				
2 Tu	0533	0.1	3	17 W	0008	7.5	229
	1147	7.9	241		0610	0.9	27
	1759	0.6	18		1215	8.7	265
	2356	7.7	235		1849	-0.4	-12
3 W	0608	0.2	6	18 Th	0054	7.4	226
	1216	8.4	256		0644	1.3	40
	1839	-0.2	-6		1243	8.7	265
					1927	-0.6	-18
4 Th	0044	7.8	238	19 F	0136	7.3	223
	0645	0.5	15		0719	1.8	55
	1249	8.8	268		1310	8.7	265
	1924	-0.8	-24		2005	-0.7	-21
5 F	0133	7.7	235	20 Sa	0218	7.2	219
	0722	0.8	24		0751	2.2	67
	1321	9.2	280		1337	8.6	262
	2006	-1.3	-40		2037	-0.6	-18
6 Sa	0223	7.5	229	21 Su	0300	6.9	210
	0801	1.3	40		0823	2.6	79
	1356	9.4	287		1402	8.4	256
	2053	-1.5	-46		2113	-0.5	-15
7 Su	0314	7.2	219	22 M	0343	6.7	204
	0840	1.8	55		0855	2.9	88
	1435	9.3	283		1431	8.2	250
	2143	-1.4	-43		2148	-0.2	-6
8 M	0409	6.8	207	23 Tu	0427	6.4	195
	0925	2.2	67		0930	3.3	101
	1517	9.1	277		1506	8.0	244
	2236	-1.1	-34		2227	0.2	6
9 Tu	0512	6.4	195	24 W	0516	6.2	189
	1017	2.7	82		1012	3.5	107
	1607	8.6	262		1547	7.7	235
	2337	-0.6	-18		2313	0.5	15
10 W	0621	6.2	189	25 Th	0612	6.0	183
	1123	3.1	94		1109	3.7	113
	1712	7.9	241		1639	7.3	223
11 Th	0050	-0.2	-6	26 F	0008	0.8	24
	0733	6.2	189		0715	6.1	186
	1246	3.2	98		1219	3.8	116
	1832	7.3	223		1745	6.8	207
12 F	0201	0.1	3	27 Sa	0112	1.0	30
	0843	6.6	201		0810	6.4	195
	1412	3.0	91		1340	3.5	107
	2001	7.1	216		1911	6.6	201
13 Sa	0310	0.2	6	28 Su	0214	1.1	34
	0941	7.1	216		0859	6.9	210
	1529	2.3	70		1454	2.9	88
	2120	7.1	216		2031	6.6	201
14 Su	0406	0.2	6	29 M	0310	1.1	34
	1027	7.7	235		0941	7.5	229
	1629	1.4	43		1553	2.3	61
	2226	7.3	223		2144	6.9	210
15 M	0451	0.3	9	30 Tu	0358	1.1	34
	1106	8.2	250		1018	8.1	247
	1725	0.7	21		1645	1.0	30
	2319	7.4	226		2245	7.2	219
				31 W	0440	1.3	40
					1055	8.7	265
					1734	0.0	0
					2340	7.4	226

NOVEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Th	0526	1.5	46	16 F	0044	7.3	223
	1131	9.3	283		0611	2.6	79
	1820	-0.8	-24		1204	9.0	274
					1909	-0.7	-21
2 F	0034	7.6	232	17 Sa	0127	7.3	223
	0608	1.8	55		0647	3.0	91
	1207	9.7	296		1233	9.0	274
	1905	-1.4	-43		1944	-0.7	-21
3 Sa	0127	7.6	232	18 Su	0209	7.3	223
	0650	2.1	64		0725	3.2	98
	1245	9.9	302		1303	8.9	271
	1951	-1.8	-55		2019	-0.6	-18
4 Su	0216	7.6	232	19 M	0250	7.2	219
	0735	2.4	73		0801	3.5	107
	1327	10.0	305		1333	8.8	268
	2039	-1.8	-55		2053	-0.4	-12
5 M	0309	7.4	226	20 Tu	0330	7.1	216
	0824	2.7	82		0837	3.6	110
	1413	9.8	299		1407	8.6	262
	2130	-1.6	-49		2129	-0.2	-6
6 Tu	0407	7.2	219	21 W	0409	7.0	213
	0916	3.0	91		0916	3.7	113
	1502	9.3	283		1443	8.4	256
	2223	-1.1	-34		2202	0.1	3
7 W	0503	7.1	216	22 Th	0451	6.9	210
	1015	3.2	98		0958	3.8	116
	1557	8.7	265		1525	8.1	247
	2323	-0.5	-15		2240	0.4	12
8 Th	0605	7.0	213	23 F	0536	6.9	210
	1124	3.3	101		1051	3.8	116
	1703	7.9	241		1614	7.7	235
					2324	0.7	21
9 F	0023	0.1	3	24 Sa	0622	7.1	216
	0707	7.2	219		1153	3.7	113
	1243	3.2	98		1716	7.2	219
	1822	7.3	223				
10 Sa	0126	0.6	18	25 Su	0012	1.1	34
	0807	7.5	229		0710	7.4	226
	1402	2.7	82		1305	3.3	101
	1948	6.9	210		1835	6.7	204
11 Su	0226	1.0	30	26 M	0105	1.5	46
	0859	6.0	244		0757	7.8	238
	1515	2.0	61		1415	2.6	79
	2104	6.8	207		1958	6.5	198
12 M	0320	1.3	40	27 Tu	0203	1.8	55
	0944	8.4	256		0842	8.3	253
	1614	1.2	37		1521	1.7	52
	2211	6.9	210		2117	6.6	201
13 Tu	0408	1.6	49	28 W	0259	2.2	67
	1026	8.8	268		0925	8.9	271
	1706	0.5	15		1617	0.7	21
	2307	7.0	213		2226	6.8	207
14 W	0451	1.9	58	29 Th	0351	2.5	76
	1101	9.0	274		1006	9.5	290
	1751	-0.1	-3		1711	-0.2	-6
	2359	7.2	219		2327	7.2	219
15 Th	0533	2.3	70	30 F	0445	2.7	82
	1133	9.1	277		1050	9.9	302
	1830	-0.5	-15		1801	-1.0	-30

DECEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Sa	0027	7.4	226	16 Su	0115	7.5	229
	0536	2.9	88		0625	3.7	113
	1135	10.2	311		1206	9.1	277
	1852	-1.5	-46		1928	-0.5	-15
2 Su	0120	7.6	232	17 M	0157	7.4	226
	0628	3.1	94		0706	3.8	116
	1221	10.4	317		1241	9.0	274
	1942	-1.8	-55		2004	-0.4	-12
3 M	0211	7.7	235	18 Tu	0236	7.5	229
	0721	3.2	98		0745	3.8	116
	1312	10.3	314		1317	9.0	274
	2031	-1.7	-52		2037	-0.3	-9
4 Tu	0303	7.8	238	19 W	0312	7.5	229
	0816	3.2	98		0826	3.7	113
	1401	10.0	305		1355	8.9	271
	2121	-1.4	-43		2109	-0.2	-6
5 W	0355	7.9	241	20 Th	0346	7.6	232
	0914	3.2	98		0903	3.7	113
	1453	9.5	290		1434	8.7	265
	2209	-1.0	-30		2140	0.0	0
6 Th	0447	7.9	241	21 F	0419	7.7	235
	1012	3.1	94		0945	3.5	107
	1552	8.8	268		1514	8.4	256
	2259	-0.3	-9		2212	0.3	9
7 F	0537	8.0	244	22 Sa	0454	7.8	238
	1116	3.0	91		1031	3.4	104
	1654	8.0	244		1602	8.0	244
	2347	0.4	12		2245	0.6	18
8 Sa	0629	8.1	247	23 Su	0529	8.1	247
	1224	2.9	88		1124	3.1	94
	1803	7.3	223		1657	7.4	226
					2324	1.1	34
9 Su	0039	1.1	34	24 M	0608	8.3	253
	0718	8.3	253		1227	2.7	82
	1337	2.5	76		1806	6.8	207
	1923	6.7	204				
10 M	0131	1.8	55	25 Tu	0009	1.8	55
	0809	8.6	262		0651	8.6	262
	1448	1.9	58		1336	2.2	67
	2039	6.4	195		1929	6.3	192
11 Tu	0227	2.4	73	26 W	0102	2.4	73
	0854	8.8	268		0741	9.0	274
	1548	1.2	37		1445	1.4	43
	2150	6.5	198		2054	6.3	192
12 W	0320	2.8	85	27 Th	0203	3.0	91
	0937	8.9	271		0833	9.3	283
	1644	0.6	18		1551	0.6	18
	2251	6.7	204		2210	6.5	198
13 Th	0411	3.2	98	28 F	0312	3.4	104
	1018	9.0	274		0925	9.7	296
	1729	0.1	3		1653	-0.2	-6
	2345	7.0	213		2319	6.9	210
14 F	0457	3.4	104	29 Sa	0418	3.6	110
	1055	9.1	277		1021	10.0	305
	1811	-0.2	-6		1751	-0.9	-27
15 Sa	0033	7.2	219	30 Su	0018	7.3	223
	0543	3.6	110		0520	3.6	110
	1131	9.1	277		1115	10.2	311
	1852	-0.4	-12		1844	-1.3	-40
				31 M	0110	7.6	232
					0618	3.4	104
					1211	10.3	314
					1932	-1.5	-46

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ABERDEEN, WASHINGTON, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height (ft)	Height (cm)
1	0411	10.1	308
M	1018	4.0	122
	1542	10.3	314
	2235	1.0	30
2	0450	10.5	320
Tu	1109	3.6	110
	1641	9.6	293
	2317	1.8	55
3	0535	10.8	329
W	1207	3.2	98
	1748	9.0	274
4	0003	2.6	79
Th	0621	11.1	338
	1307	2.7	82
	1859	8.4	256
5	0055	3.5	107
F	0714	11.4	347
	1414	2.0	61
	2017	8.1	247
6	0200	4.2	128
Sa	0810	11.6	354
	1521	1.3	40
	2136	8.1	247
7	0310	4.7	143
Su	0910	11.8	360
	1624	0.6	18
	2250	8.4	256
8	0417	4.8	146
M	1009	12.0	366
	1723	-0.1	-3
	2355	8.9	271
9	0519	4.6	140
Tu	1106	12.2	372
	1816	-0.6	-18
10	0054	9.4	287
W	0615	4.3	131
	1202	12.2	372
	1904	-0.9	-27
11	0143	9.8	299
Th	0708	4.0	122
	1251	12.0	366
	1950	-0.8	-24
12	0228	10.1	308
F	0757	3.7	113
	1343	11.7	357
	2032	-0.5	-15
13	0307	10.3	314
Sa	0844	3.5	107
	1425	11.2	341
	2111	0.0	0
14	0342	10.4	317
Su	0930	3.3	101
	1511	10.6	323
	2150	0.7	21
15	0416	10.5	320
M	1015	3.2	98
	1557	9.9	302
	2229	1.5	46
16	0450	10.5	320
Tu	1102	3.2	98
	1643	9.2	280
	2307	2.3	70
17	0525	10.5	320
W	1151	3.1	94
	1736	8.5	259
	2349	3.2	98
18	0605	10.4	317
Th	1243	3.0	91
	1834	8.0	244
19	0031	4.0	122
F	0650	10.4	317
	1341	2.8	85
	1939	7.6	232
20	0123	4.7	143
Sa	0737	10.3	314
	1441	2.5	76
	2049	7.4	226
21	0229	5.2	158
Su	0831	10.4	317
	1540	2.1	64
	2159	7.6	232
22	0335	5.4	165
M	0925	10.5	320
	1638	1.5	46
	2305	7.9	241
23	0435	5.3	162
Tu	1019	10.7	326
	1729	0.9	27
24	0000	8.4	256
W	0531	5.0	152
	1108	11.0	335
	1816	0.4	12
25	0042	8.8	268
Th	0620	4.7	143
	1155	11.2	341
	1859	0.0	0
26	0121	9.3	283
F	0704	4.2	128
	1240	11.3	344
	1939	-0.3	-9
27	0156	9.8	299
Sa	0750	3.8	116
	1324	11.3	344
	2018	-0.2	-6
28	0228	10.2	311
Su	0832	3.3	101
	1406	11.1	338
	2056	0.1	3
29	0300	10.6	323
M	0915	2.8	85
	1452	10.7	326
	2134	0.6	18
30	0339	10.9	332
Tu	1001	2.4	73
	1540	10.2	311
	2211	1.3	40
31	0416	11.2	341
W	1050	2.0	61
	1635	9.5	290
	2250	2.2	67

FEBRUARY

Day	Time	Height (ft)	Height (cm)
1	0459	11.4	347
Th	1142	1.8	55
	1736	8.7	265
	2334	3.1	94
2	0544	11.4	347
F	1244	1.7	52
	1848	8.1	247
3	0029	4.0	122
Sa	0642	11.3	344
	1350	1.5	46
	2006	7.7	235
4	0135	4.7	143
Su	0745	11.1	338
	1459	1.2	37
	2130	7.7	235
5	0252	5.0	152
M	0853	11.1	338
	1607	0.8	24
	2247	8.2	250
6	0404	4.9	149
Tu	0959	11.2	341
	1708	0.3	9
	2353	8.8	268
7	0508	4.4	134
W	1058	11.3	344
	1801	-0.1	-3
8	0042	9.4	287
Th	0604	3.8	116
	1155	11.3	344
	1848	-0.3	-9
9	0123	9.9	302
F	0655	3.2	98
	1246	11.3	344
	1928	-0.3	-9
10	0159	10.2	311
Sa	0741	2.7	82
	1331	11.0	335
	2007	0.0	0
11	0231	10.5	320
Su	0823	2.3	70
	1413	10.6	323
	2044	0.5	15
12	0300	10.6	323
M	0905	2.1	64
	1452	10.1	308
	2118	1.1	34
13	0329	10.6	323
Tu	0945	2.0	61
	1531	9.6	293
	2154	1.8	55
14	0358	10.5	320
W	1026	2.0	61
	1613	9.0	274
	2230	2.6	79
15	0430	10.4	317
Th	1112	2.1	64
	1659	8.4	256
	2303	3.4	104
16	0506	10.2	311
F	1157	2.2	67
	1751	7.8	238
	2342	4.1	125
17	0548	10.0	305
Sa	1252	2.3	70
	1854	7.3	223
18	0029	4.8	146
Su	0639	9.8	299
	1354	2.3	70
	2004	7.1	216
19	0137	5.3	162
M	0742	9.7	296
	1500	2.1	64
	2120	7.2	219
20	0257	5.4	165
Tu	0845	9.8	299
	1601	1.6	49
	2225	7.6	232
21	0404	5.1	155
W	0948	10.0	305
	1657	1.0	30
	2321	8.2	250
22	0503	4.5	137
Th	1045	10.3	314
	1745	0.5	15
23	0003	8.9	271
F	0557	3.8	116
	1134	10.6	323
	1831	0.1	3
24	0042	9.5	290
Sa	0643	3.0	91
	1224	10.8	329
	1910	-0.1	-3
25	0117	10.1	308
Su	0729	2.2	67
	1312	10.9	332
	1949	0.0	0
26	0149	10.7	326
M	0811	1.4	43
	1357	10.7	326
	2030	0.4	12
27	0225	11.1	338
Tu	0857	0.8	24
	1446	10.3	314
	2107	1.0	30
28	0301	11.4	347
W	0942	0.4	12
	1535	9.8	299
	2147	1.8	55

MARCH

Day	Time	Height (ft)	Height (cm)
1	0342	11.5	351
Th	1030	0.3	9
	1630	9.0	274
	2229	2.6	79
2	0422	11.3	344
F	1122	0.5	15
	1732	8.3	253
	2315	3.5	107
3	0515	11.0	335
Sa	1221	0.8	24
	1842	7.7	235
4	0014	4.2	128
Su	0618	10.6	323
	1327	1.0	30
	2002	7.5	229
5	0126	4.7	143
M	0727	10.2	311
	1437	1.1	34
	2123	7.7	235
6	0242	4.7	143
Tu	0841	10.0	305
	1548	0.9	27
	2236	8.2	250
7	0354	4.3	131
W	0953	10.0	305
	1647	0.6	18
	2328	8.8	268
8	0458	3.5	107
Th	1053	10.1	308
	1737	0.4	12
9	0012	9.4	287
F	0551	2.7	82
	1148	10.2	311
	1820	0.3	9
10	0048	9.9	302
Sa	0637	2.0	61
	1238	10.2	311
	1901	0.4	12
11	0117	10.2	311
Su	0720	1.4	43
	1320	10.1	308
	1938	0.7	21
12	0149	10.4	317
M	0801	1.0	30
	1358	9.8	299
	2013	1.1	34
13	0214	10.4	317
Tu	0838	0.7	21
	1434	9.5	290
	2048	1.7	52
14	0241	10.4	317
W	0918	0.7	21
	1512	9.0	274
	2122	2.3	70
15	0310	10.3	314
Th	0954	0.8	24
	1549	8.6	262
	2155	3.0	91
16	0339	10.1	308
F	1035	1.0	30
	1630	8.1	247
	2227	3.6	110
17	0411	9.9	302
Sa	1120	1.3	40
	1720	7.6	232
	2259	4.2	128
18	0451	9.6	293
Su	1210	1.6	49
	1818	7.2	219
	2345	4.7	143
19	0545	9.2	280
M	1311	1.8	55
	1927	7.0	213
20	0059	5.0	152
Tu	0656	9.0	274
	1415	1.8	55
	2037	7.2	219
21	0222	5.0	152
W	0808	8.9	271
	1519	1.5	46
	2139	7.6	232
22	0335	4.5	137
Th	0916	9.1	277
	1618	1.1	34
	2232	8.3	253
23	0437	3.6	110
F	1018	9.5	290
	1709	0.7	21
	2316	9.1	277
24	0529	2.5	76
Sa	1116	9.8	299
	1755	0.5	15
	2355	9.8	299
25	0618	1.4	43
Su	1208	10.1	308
	1837	0.5	15
26	0032	10.5	320
M	0704	0.3	9
	1300	10.2	311
	1919	0.7	21
27	0110	11.1	338
Tu	0751	-0.5	-15
	1349	10.0	305
	2001	1.1	34
28	0147	11.4	347
W	0835	-1.0	-30
	1439	9.7	296
	2043	1.7	52
29	0228	11.5	351
Th	0923	-1.2	-37
	1529	9.2	280
	2125	2.3	70
30	0312	11.4	347
F	1011	-1.0	-30
	1627	8.6	262
	2214	3.0	91
31	0358	11.0	335
Sa	1104	-0.6	-18
	1728	8.0	244
	2306	3.6	110

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Su	0455	10.3	314	16 M	0405	9.2	280
	1202	0.0	0		1138	0.8	24
	1839	7.7	235		1752	7.2	219
					2328	4.5	137
2 M	0007	4.1	125	17 Tu	0501	8.8	268
	0600	9.7	296		1233	1.0	30
	1306	0.5	15		1855	7.2	219
	1952	7.6	232				
3 Tu	0118	4.2	128	18 W	0039	4.5	137
	0713	9.2	280		0613	8.4	256
	1411	0.9	27		1330	1.2	37
	2104	7.9	241		1955	7.5	229
4 W	0231	4.0	122	19 Th	0155	4.2	128
	0829	8.9	271		0733	8.2	250
	1516	1.0	30		1433	1.2	37
	2200	8.4	256		2050	8.1	247
5 Th	0341	3.3	101	20 F	0306	3.5	107
	0941	8.9	271		0845	8.3	253
	1614	1.0	30		1530	1.2	37
	2249	9.0	274		2139	8.8	268
6 F	0441	2.4	73	21 Sa	0408	2.4	73
	1044	8.9	271		0953	8.5	259
	1703	1.0	30		1623	1.2	37
	2329	9.5	290		2225	9.6	293
7 Sa	0533	1.6	49	22 Su	0502	1.1	34
	1137	9.0	274		1053	8.9	271
	1748	1.0	30		1713	1.2	37
					2309	10.3	314
8 Su	0003	9.9	302	23 M	0553	-0.1	-3
	0617	0.8	24		1150	9.1	277
	1222	9.1	277		1804	1.3	40
	1827	1.2	37		2350	10.9	332
9 M	0033	10.1	308	24 Tu	0641	-1.2	-37
	0657	0.2	6		1246	9.3	283
	1305	9.0	274		1850	1.6	49
	1905	1.5	46				
10 Tu	0103	10.2	311	25 W	0032	11.4	347
	0736	-0.2	-6		0730	-2.0	-61
	1342	8.9	271		1339	9.2	280
	1944	1.9	58		1935	1.9	58
11 W	0131	10.2	311	26 Th	0116	11.5	351
	0814	-0.4	-12		0816	-2.3	-70
	1419	8.7	265		1433	9.0	274
	2019	2.4	73		2022	2.3	70
12 Th	0159	10.1	308	27 F	0201	11.4	347
	0850	-0.3	-9		0905	-2.3	-70
	1455	8.4	256		1528	8.7	265
	2055	2.9	88		2108	2.7	82
13 F	0228	9.9	302	28 Sa	0248	11.1	338
	0928	-0.2	-6		0955	-1.9	-58
	1531	8.0	244		1626	8.3	253
	2130	3.4	104		2200	3.1	94
14 Sa	0257	9.7	296	29 Su	0340	10.5	320
	1007	0.1	3		1045	-1.3	-40
	1613	7.7	235		1725	8.1	247
	2203	3.8	116		2256	3.4	104
15 Su	0328	9.5	290	30 M	0439	9.7	296
	1051	0.4	12		1141	-0.5	-15
	1659	7.4	226		1829	8.0	244
	2240	4.2	128		2357	3.6	110

MAY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Tu	0548	8.9	271	16 W	0435	8.5	259
	1239	0.2	6		1156	0.4	12
	1930	8.1	247		1823	7.8	238
2 W	0104	3.5	107	17 Th	0021	3.8	116
	0658	8.3	253		0545	8.0	244
	1339	0.7	21		1248	0.8	24
	2025	8.4	256		1914	8.2	250
3 Th	0214	3.1	94	18 F	0128	3.3	101
	0811	7.9	241		0702	7.7	235
	1435	1.2	37		1343	1.2	37
	2116	8.8	268		2004	8.8	268
4 F	0319	2.4	73	19 Sa	0237	2.4	73
	0921	7.8	238		0816	7.6	232
	1531	1.5	46		1442	1.5	46
	2159	9.2	280		2052	9.5	290
5 Sa	0417	1.5	46	20 Su	0338	1.3	40
	1021	7.8	238		0927	7.7	235
	1623	1.7	52		1541	1.8	55
	2238	9.6	293		2140	10.1	308
6 Su	0507	0.7	21	21 M	0434	0.0	0
	1117	8.0	244		1033	7.9	241
	1710	1.9	58		1637	2.1	64
	2316	9.8	299		2228	10.7	326
7 M	0549	0.0	0	22 Tu	0529	-1.1	-34
	1203	8.1	247		1136	8.2	250
	1754	2.2	67		1729	2.3	70
	2348	10.0	305		2315	11.2	341
8 Tu	0631	-0.5	-15	23 W	0619	-2.0	-61
	1248	8.1	247		1235	8.4	256
	1836	2.4	73		1824	2.4	73
9 W	0021	10.0	305	24 Th	0003	11.4	347
	0710	-0.9	-27		0711	-2.6	-79
	1328	8.1	247		1333	8.5	259
	1915	2.7	82		1913	2.6	79
10 Th	0053	10.0	305	25 F	0051	11.4	347
	0749	-1.0	-30		0800	-2.8	-85
	1406	8.0	244		1429	8.5	259
	1954	3.0	91		2005	2.7	82
11 F	0125	9.8	299	26 Sa	0141	11.2	341
	0827	-1.0	-30		0849	-2.7	-82
	1442	7.9	241		1522	8.5	259
	2032	3.4	104		2054	2.8	85
12 Sa	0157	9.7	296	27 Su	0233	10.7	326
	0907	-0.8	-24		0937	-2.2	-67
	1521	7.7	235		1616	8.4	256
	2109	3.7	113		2147	2.9	88
13 Su	0229	9.5	290	28 M	0328	10.0	305
	0947	-0.6	-18		1026	-1.6	-49
	1600	7.5	229		1712	8.4	256
	2147	3.9	119		2243	3.0	91
14 M	0301	9.2	280	29 Tu	0427	9.2	280
	1027	-0.3	-9		1115	-0.8	-24
	1645	7.5	229		1802	8.5	259
	2232	4.1	125		2340	2.9	88
15 Tu	0343	8.9	271	30 W	0527	8.4	256
	1109	0.0	0		1205	0.0	0
	1733	7.6	232		1854	8.7	265
	2320	4.1	125				
				31 Th	0042	2.7	82
					0633	7.7	235
					1258	0.8	24
					1941	8.9	271

JUNE

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 F	0145	2.3	70	16 Sa	0102	2.2	67
	0742	7.2	219		0639	7.4	226
	1350	1.5	46		1258	1.4	43
	2024	9.1	277		1918	9.5	290
2 Sa	0243	1.7	52	17 Su	0205	1.4	43
	0847	7.0	213		0753	7.1	216
	1445	2.1	64		1356	2.0	61
	2106	9.4	287		2010	10.0	305
3 Su	0343	1.0	30	18 M	0309	0.5	15
	0951	7.0	213		0906	7.0	213
	1538	2.5	76		1458	2.6	79
	2149	9.6	293		2103	10.4	317
4 M	0434	0.3	9	19 Tu	0409	-0.5	-15
	1049	7.1	216		1017	7.2	219
	1628	2.8	85		1601	2.9	88
	2228	9.7	296		2156	10.8	329
5 Tu	0523	-0.3	-9	20 W	0508	-1.5	-46
	1142	7.3	223		1123	7.5	229
	1719	3.0	91		1703	3.0	91
	2308	9.8	299		2249	11.1	338
6 W	0606	-0.8	-24	21 Th	0603	-2.2	-67
	1231	7.4	226		1229	7.8	238
	1804	3.1	94		1802	3.0	91
	2347	9.8	299		2342	11.2	341
7 Th	0648	-1.1	-34	22 F	0655	-2.6	-79
	1314	7.5	229		1325	8.1	247
	1849	3.3	101		1856	2.8	85
8 F	0024	9.8	299	23 Sa	0036	11.2	341
	0729	-1.3	-40		0744	-2.7	-82
	1356	7.6	232		1421	8.4	256
	1932	3.4	104		1949	2.6	79
9 Sa	0100	9.7	296	24 Su	0128	10.9	332
	0809	-1.3	-40		0832	-2.6	-79
	1431	7.6	232		1510	8.6	262
	2012	3.5	107		2040	2.5	76
10 Su	0135	9.6	293	25 M	0221	10.4	317
	0848	-1.2	-37		0918	-2.1	-64
	1510	7.7	235		1555	8.8	268
	2053	3.6	110		2130	2.4	73
11 M	0212	9.4	287	26 Tu	0313	9.7	296
	0927	-1.0	-30		1002	-1.4	-43
	1545	7.8	238		1640	8.9	271
	2134	3.6	110		2222	2.3	70
12 Tu	0249	9.1	277	27 W	0406	8.9	271
	1006	-0.8	-24		1045	-0.6	-18
	1622	8.0	244		1722	9.0	274
	2218	3.5	107		2316	2.2	67
13 W	0331	8.8	268	28 Th	0501	8.1	247
	1045	-0.4	-12		1130	0.3	9
	1704	8.2	250		1805	9.1	277
	2307	3.3	101				
14 Th	0424	8.3	253	29 F	0010	2.0	61
	1124	0.1	3		0600	7.4	226
	1748	8.6	262		1215	1.1	34
					1847	9.1	277
15 F	0000	2.9	88	30 Sa	0106	1.8	55
	0529	7.8	238		0703	6.8	207
	1207	0.7	21		1305	2.0	61
	1830	9.0	274		1929	9.2	280

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

best copy available

ABERDEEN, WASHINGTON, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0205	1.4	43	16 M	0133	0.7	21
	0808	6.5	198		0735	6.7	204
	1356	2.7	82		1320	2.7	82
	2015	9.3	283		1934	10.2	311
2 M	0303	1.0	30	17 Tu	0244	0.1	3
	0912	6.4	195		0853	6.6	201
	1452	3.2	98		1429	3.3	101
	2101	9.3	283		2032	10.3	314
3 Tu	0359	0.5	15	18 W	0350	-0.6	-18
	1017	6.5	198		1009	6.8	207
	1551	3.5	107		1540	3.5	107
	2146	9.4	287		2134	10.5	320
4 W	0450	-0.1	-3	19 Th	0452	-1.3	-40
	1117	6.7	204		1119	7.2	219
	1646	3.6	110		1646	3.4	104
	2233	9.5	290		2233	10.7	326
5 Th	0539	-0.6	-18	20 F	0547	-1.8	-55
	1213	7.0	213		1221	7.7	235
	1737	3.6	110		1747	3.0	91
	2318	9.6	293		2332	10.8	329
6 F	0625	-1.0	-30	21 Sa	0640	-2.2	-67
	1255	7.3	223		1313	8.2	250
	1825	3.5	107		1844	2.6	79
7 Sa	0002	9.7	296	22 Su	0027	10.7	326
	0707	-1.2	-37		0726	-2.2	-67
	1337	7.6	232		1402	8.7	265
	1910	3.4	104		1934	2.1	64
8 Su	0041	9.7	296	23 M	0120	10.5	320
	0747	-1.4	-43		0810	-2.0	-61
	1412	7.8	238		1444	9.0	274
	1953	3.2	98		2023	1.8	55
9 M	0123	9.6	293	24 Tu	0209	10.0	305
	0826	-1.4	-43		0852	-1.6	-49
	1447	8.1	247		1523	9.2	280
	2036	3.1	94		2110	1.5	46
10 Tu	0200	9.5	290	25 W	0257	9.4	287
	0903	-1.2	-37		0933	-0.9	-27
	1519	8.4	256		1558	9.3	283
	2118	2.8	85		2157	1.4	43
11 W	0241	9.2	280	26 Th	0345	8.7	265
	0939	-0.8	-24		1012	-0.1	-3
	1551	8.7	265		1633	9.3	283
	2200	2.5	76		2245	1.3	40
12 Th	0326	8.8	268	27 F	0433	8.0	244
	1016	-0.3	-9		1051	0.8	24
	1628	9.0	274		1709	9.3	283
	2247	2.1	64		2333	1.3	40
13 F	0415	8.3	253	28 Sa	0525	7.3	223
	1051	0.3	9		1133	1.7	52
	1707	9.4	287		1748	9.2	280
	2338	1.7	52				
14 Sa	0514	7.7	235	29 Su	0023	1.3	40
	1133	1.1	34		0622	6.7	204
	1749	9.7	296		1218	2.6	79
					1832	9.1	277
15 Su	0033	1.2	37	30 M	0119	1.3	40
	0623	7.1	216		0723	6.3	192
	1221	1.9	58		1307	3.3	101
	1839	9.9	302		1919	9.0	274
				31 Tu	0218	1.1	34
					0832	6.2	189
					1409	3.8	116
					2013	8.9	271

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0319	0.8	24	16 Th	0332	-0.3	-9
	0939	6.3	192		1004	6.9	210
	1515	4.0	122		1530	3.7	113
	2108	9.0	274		2122	10.0	305
2 Th	0418	0.4	12	17 F	0436	-0.7	-21
	1046	6.6	201		1113	7.5	229
	1615	3.9	119		1638	3.3	101
	2202	9.2	280		2228	10.1	308
3 F	0510	-0.1	-3	18 Sa	0531	-1.1	-34
	1142	7.0	213		1205	8.1	247
	1713	3.7	113		1737	2.6	79
	2255	9.4	287		2327	10.2	311
4 Sa	0558	-0.6	-18	19 Su	0620	-1.4	-43
	1226	7.5	229		1251	8.7	265
	1801	3.3	101		1831	1.9	58
	2340	9.6	293				
5 Su	0640	-1.0	-30	20 M	0022	10.2	311
	1302	7.9	241		0705	-1.3	-40
	1849	2.9	88		1330	9.2	280
					1918	1.3	40
6 M	0026	9.7	296	21 Tu	0112	10.0	305
	0721	-1.2	-37		0745	-1.1	-34
	1336	8.4	256		1405	9.5	290
	1933	2.4	73		2003	0.9	27
7 Tu	0108	9.7	296	22 W	0156	9.7	296
	0800	-1.1	-34		0823	-0.6	-18
	1410	8.8	268		1437	9.7	296
	2014	2.0	61		2046	0.6	18
8 W	0150	9.6	293	23 Th	0240	9.2	280
	0836	-0.8	-24		0902	0.1	3
	1440	9.2	280		1509	9.7	296
	2056	1.5	46		2128	0.5	15
9 Th	0232	9.3	283	24 F	0321	8.6	262
	0912	-0.4	-12		0939	0.9	27
	1512	9.5	290		1540	9.6	293
	2138	1.1	34		2210	0.6	18
10 F	0318	8.8	268	25 Sa	0403	8.0	244
	0950	0.3	9		1015	1.7	52
	1547	9.8	299		1613	9.4	287
	2223	0.7	21		2255	0.8	24
11 Sa	0408	8.3	253	26 Su	0451	7.4	226
	1026	1.1	34		1053	2.5	76
	1626	10.0	305		1651	9.2	280
	2315	0.5	15		2341	1.0	30
12 Su	0507	7.6	232	27 M	0541	6.9	210
	1107	1.9	58		1132	3.2	98
	1712	10.1	308		1733	8.9	271
13 M	0010	0.4	12	28 Tu	0036	1.2	37
	0612	7.0	213		0641	6.5	198
	1152	2.7	82		1221	3.8	116
	1805	10.0	305		1826	8.7	265
14 Tu	0113	0.3	9	29 W	0135	1.3	40
	0726	6.6	201		0751	6.3	192
	1258	3.4	104		1330	4.3	131
	1907	9.9	302		1929	8.6	262
15 W	0222	0.1	3	30 Th	0239	1.2	37
	0848	6.6	201		0903	6.4	195
	1414	3.8	116		1439	4.4	134
	2015	9.9	302		2031	8.6	262
				31 F	0340	0.9	27
					1009	6.8	207
					1547	4.1	125
					2133	8.9	271

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0436	0.4	12	16 Su	0508	-0.1	-3
	1101	7.4	226		1141	9.0	274
	1647	3.5	107		1727	2.0	61
	2229	9.2	280		2323	9.7	296
2 Su	0525	0.0	0	17 M	0555	-0.2	-6
	1143	8.0	244		1219	9.5	290
	1739	2.8	85		1814	1.2	37
	2321	9.5	290				
3 M	0608	-0.4	-12	18 Tu	0014	9.7	296
	1219	8.6	262		0636	0.0	0
	1824	2.1	64		1252	9.9	302
					1859	0.5	15
4 Tu	0007	9.7	296	19 W	0101	9.6	293
	0649	-0.5	-15		0715	0.3	9
	1253	9.2	280		1324	10.1	308
	1908	1.3	40		1941	0.1	3
5 W	0052	9.8	299	20 Th	0142	9.4	287
	0729	-0.3	-9		0753	0.8	24
	1326	9.8	299		1352	10.2	311
	1951	0.6	18		2020	-0.1	-3
6 Th	0138	9.7	296	21 F	0221	9.0	274
	0807	0.1	3		0829	1.4	43
	1358	10.2	311		1422	10.1	308
	2033	0.1	3		2100	-0.1	-3
7 F	0222	9.4	287	22 Sa	0300	8.6	262
	0845	0.6	18		0907	2.1	64
	1433	10.5	320		1452	9.9	302
	2116	-0.3	-9		2139	0.1	3
8 Sa	0310	8.9	271	23 Su	0338	8.1	247
	0921	1.3	40		0942	2.8	85
	1509	10.6	323		1522	9.7	296
	2203	-0.5	-15		2219	0.4	12
9 Su	0402	8.3	253	24 M	0421	7.7	235
	1003	2.1	64		1018	3.4	104
	1551	10.6	323		1557	9.4	287
	2253	-0.4	-12		2304	0.8	24
10 M	0501	7.7	235	25 Tu	0507	7.2	219
	1048	2.8	85		1056	4.0	122
	1640	10.3	314		1635	9.1	277
	2349	-0.1	-3		2354	1.2	37
11 Tu	0607	7.2	219	26 W	0606	6.9	210
	1144	3.5	107		1145	4.4	134
	1741	9.9	302		1730	8.7	265
12 W	0054	0.2	6	27 Th	0052	1.5	46
	0724	6.9	210		0714	6.8	207
	1253	4.0	122		1255	4.7	143
	1850	9.6	293		1839	8.5	259
13 Th	0203	0.4	12	28 F	0155	1.6	49
	0845	7.1	216		0821	7.0	213
	1409	4.1	125		1409	4.6	140
	2007	9.4	287		1953	8.4	256
14 F	0311	0.3	9	29 Sa	0258	1.4	43
	0955	7.6	232		0923	7.5	229
	1524	3.7	113		1520	4.1	125
	2120	9.4	287		2101	8.6	262
15 Sa	0413	0.1	3	30 Su	0354	1.1	34
	1052	8.3	253		1009	8.2	250
	1628	2.9	88		1620	3.3	101
	2226	9.5	290		2203	8.9	271

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0444	0.9	27	16	0521	1.3	40
M	1054	8.9	271	Tu	1137	10.4	317
	1710	2.3	70		1755	0.7	21
	2257	9.3	283				
2	0531	0.7	21	17	0003	9.3	283
Tu	1131	9.7	296	W	0604	1.6	49
	1758	1.2	37		1211	10.6	323
	2348	9.6	293		1837	0.1	3
3	0614	0.8	24	18	0048	9.3	283
W	1208	10.4	317	Th	0646	1.9	58
	1844	0.2	6		1241	10.7	326
					1918	-0.2	-6
4	0035	9.7	296	19	0127	9.1	277
Th	0656	1.0	30	F	0724	2.3	70
	1243	10.9	332		1311	10.7	326
	1927	-0.6	-18		1957	-0.4	-12
5	0124	9.7	296	20	0206	9.0	274
F	0738	1.4	43	Sa	0803	2.8	85
	1320	11.3	344		1341	10.5	320
	2011	-1.1	-34		2033	-0.3	-9
6	0213	9.5	290	21	0242	8.7	265
Sa	0817	1.9	58	Su	0838	3.3	101
	1359	11.5	351		1411	10.3	314
	2057	-1.3	-40		2112	0.0	0
7	0304	9.1	277	22	0321	8.4	256
Su	0903	2.5	76	M	0913	3.8	116
	1440	11.4	347		1443	10.1	308
	2145	-1.2	-37		2152	0.3	9
8	0358	8.6	262	23	0403	8.1	247
M	0947	3.1	94	Tu	0952	4.3	131
	1526	11.0	335		1514	9.8	299
	2237	-0.8	-24		2235	0.7	21
9	0459	8.1	247	24	0448	7.8	238
Tu	1036	3.7	113	W	1032	4.7	143
	1619	10.5	320		1552	9.4	287
	2333	-0.2	-6		2321	1.1	34
10	0605	7.8	238	25	0540	7.7	235
W	1138	4.1	125	Th	1124	4.9	149
	1724	9.9	302		1644	9.0	274
11	0034	0.4	12	26	0013	1.5	46
Th	0721	7.8	238	F	0639	7.7	235
	1247	4.3	131		1228	5.0	152
	1839	9.3	283		1757	8.6	262
12	0139	0.8	24	27	0109	1.8	55
F	0831	8.1	247	Sa	0735	8.1	247
	1402	4.1	125		1340	4.7	143
	1959	9.0	274		1914	8.4	256
13	0245	1.0	30	28	0209	1.9	58
Sa	0930	8.7	265	Su	0830	8.6	262
	1512	3.4	104		1448	4.0	122
	2112	8.9	271		2025	8.4	256
14	0344	1.1	34	29	0306	2.0	61
Su	1017	9.3	283	M	0916	9.3	283
	1617	2.5	76		1548	3.0	91
	2217	9.0	274		2131	8.7	265
15	0436	1.2	37	30	0359	2.0	61
M	1100	9.9	302	Tu	1001	10.1	308
	1710	1.5	46		1641	1.8	55
	2316	9.2	280		2231	9.0	274
				31	0449	2.1	64
				W	1044	10.8	329
					1731	0.6	18
					2329	9.4	287

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0538	2.3	70	16	0035	9.0	274
Th	1124	11.5	351	F	0616	3.4	104
	1818	-0.5	-15		1204	11.1	338
					1854	-0.1	-3
2	0022	9.6	293	17	0116	9.0	274
F	0623	2.5	76	Sa	0657	3.7	113
	1206	11.9	363		1239	11.1	338
	1906	-1.2	-37		1935	-0.2	-6
3	0112	9.7	296	18	0154	9.0	274
Sa	0709	2.8	85	Su	0737	4.0	122
	1248	12.2	372		1312	10.9	332
	1952	-1.7	-52		2013	-0.2	-6
4	0205	9.6	293	19	0233	8.9	271
Su	0754	3.1	94	M	0816	4.3	131
	1331	12.2	372		1344	10.7	326
	2040	-1.7	-52		2052	0.0	0
5	0300	9.4	287	20	0309	8.7	265
M	0843	3.5	107	Tu	0856	4.6	140
	1418	12.0	366		1416	10.5	320
	2129	-1.4	-43		2131	0.3	9
6	0355	9.1	277	21	0347	8.6	262
Tu	0933	3.8	116	W	0934	4.9	149
	1510	11.4	347		1451	10.2	311
	2219	-0.9	-27		2210	0.7	21
7	0455	8.9	271	22	0429	8.6	262
W	1028	4.1	125	Th	1015	5.0	152
	1606	10.7	326		1527	9.9	302
	2312	-0.1	-3		2251	1.1	34
8	0557	8.8	268	23	0511	8.7	265
Th	1130	4.3	131	F	1104	5.1	155
	1712	9.9	302		1615	9.4	287
					2335	1.5	46
9	0009	0.6	18	24	0600	8.9	271
F	0700	9.0	274	Sa	1200	4.9	149
	1236	4.2	128		1721	8.9	271
	1827	9.2	280				
10	0108	1.3	40	25	0021	2.0	61
Sa	0757	9.4	287	Su	0646	9.3	283
	1343	3.8	116		1305	4.5	137
	1943	8.7	265		1834	8.5	259
11	0207	1.9	58	26	0117	2.4	73
Su	0850	9.8	299	M	0736	9.8	299
	1453	3.1	94		1410	3.7	113
	2053	8.5	259		1950	8.4	256
12	0305	2.3	70	27	0212	2.9	88
M	0936	10.3	314	Tu	0827	10.4	317
	1553	2.3	70		1513	2.7	82
	2202	8.6	262		2059	8.5	259
13	0357	2.7	82	28	0311	3.3	101
Tu	1017	10.7	326	W	0914	11.1	338
	1646	1.4	43		1612	1.5	46
	2302	8.7	265		2209	8.7	265
14	0446	2.9	88	29	0407	3.5	107
W	1053	10.9	332	Th	1000	11.7	357
	1732	0.7	21		1704	0.3	9
	2350	8.9	271		2310	9.0	274
15	0532	3.2	98	30	0503	3.7	113
Th	1129	11.1	338	F	1049	12.2	372
	1815	0.2	6		1756	-0.6	-18

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0009	9.3	283	16	0107	8.9	271
Sa	0555	3.8	116	Su	0633	4.6	140
	1137	12.6	384		1211	11.2	341
	1848	-1.3	-40		1913	0.0	0
2	0105	9.6	293	17	0145	9.0	274
Su	0648	3.9	119	M	0718	4.7	143
	1225	12.8	390		1250	11.1	338
	1936	-1.7	-52		1954	0.0	0
3	0202	9.7	296	18	0221	9.1	277
M	0739	3.9	119	Tu	0757	4.7	143
	1314	12.7	387		1325	11.0	335
	2025	-1.7	-52		2032	0.1	3
4	0254	9.8	299	19	0253	9.2	280
Tu	0829	3.9	119	W	0838	4.8	146
	1406	12.3	375		1401	10.8	329
	2113	-1.3	-40		2110	0.3	9
5	0347	9.8	299	20	0330	9.3	283
W	0921	4.0	122	Th	0918	4.8	146
	1459	11.7	357		1437	10.6	323
	2201	-0.7	-21		2147	0.6	18
6	0439	9.8	299	21	0403	9.5	290
Th	1016	4.0	122	F	1001	4.7	143
	1557	10.9	332		1515	10.2	311
	2250	0.1	3		2222	1.0	30
7	0532	9.9	302	22	0439	9.7	296
F	1112	4.0	122	Sa	1047	4.6	140
	1659	10.0	305		1600	9.7	296
	2339	1.0	30		2301	1.5	46
8	0623	10.1	308	23	0517	10.0	305
Sa	1215	3.8	116	Su	1133	4.2	128
	1805	9.2	280		1656	9.2	280
					2338	2.2	67
9	0029	1.9	58	24	0600	10.4	317
Su	0713	10.3	314	M	1229	3.8	116
	1318	3.5	107		1805	8.7	265
	1915	8.5	259				
10	0123	2.7	82	25	0021	2.9	88
M	0800	10.5	320	Tu	0645	10.7	326
	1420	3.0	91		1335	3.1	94
	2027	8.2	250		1917	8.3	253
11	0219	3.4	104	26	0116	3.6	110
Tu	0846	10.7	326	W	0736	11.1	338
	1519	2.4	73		1439	2.3	70
	2135	8.1	247		2031	8.1	247
12	0314	3.9	119	27	0220	4.2	128
W	0930	10.9	332	Th	0829	11.6	354
	1615	1.7	52		1543	1.4	43
	2238	8.3	253		2148	8.3	253
13	0409	4.3	131	28	0331	4.6	140
Th	1012	11.1	338	F	0925	12.0	366
	1705	1.1	34		1641	0.4	12
	2333	8.5	259		2257	8.6	262
14	0502	4.5	137	29	0433	4.7	143
F	1054	11.2	341	Sa	1020	12.3	375
	1751	0.6	18		1739	-0.5	-15
15	0024	8.7	265	30	0003	9.0	274
Sa	0548	4.5	137	Su	0536	4.6	140
	1133	11.2	341		1118	12.6	384
	1833	0.2	6		1832	-1.1	-34
				31	0059	9.5	290
				M	0632	4.3	131
					1211	12.7	387
					1922	-1.4	-43

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

PORT TOWNSEND, WASHINGTON, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0001	-0.9	-27	16 Tu	0042	1.7	52
	0801	9.5	290		0807	9.2	280
	1340	5.6	171		1436	3.5	107
	1802	6.5	198		2002	5.7	174
2 Tu	0041	0.3	9	17 W	0117	3.1	94
	0829	9.5	290		0830	9.0	274
	1436	4.5	137		1527	2.7	82
	1925	5.9	180		2144	5.4	165
3 W	0116	1.8	55	18 Th	0148	4.5	137
	0857	9.5	290		0851	8.8	268
	1535	3.3	101		1620	2.0	61
	2112	5.5	168				
4 Th	0205	3.4	104	19 F	0024	5.9	180
	0925	9.5	290		0230	5.8	177
	1624	1.9	58		0913	8.7	265
	2323	5.8	177		1706	1.3	40
5 F	0255	5.0	152	20 Sa	0939	8.5	259
	0954	9.6	293		1748	0.7	21
	1718	0.6	18				
6 Sa	0130	6.9	210	21 Su	0320	7.8	238
	0406	6.5	198		0550	7.6	232
	1023	9.6	293		1008	8.4	256
	1808	-0.5	-15		1833	0.1	3
7 Su	0249	8.1	247	22 M	0351	8.4	256
	0536	7.6	232		0720	7.9	241
	1101	9.6	293		1045	8.3	253
	1857	-1.4	-43		1917	-0.4	-12
8 M	0341	9.0	274	23 Tu	0420	8.8	268
	0702	8.1	247		0827	7.9	241
	1147	9.5	290		1134	8.2	250
	1946	-2.0	-61		1958	-0.9	-27
9 Tu	0423	9.6	293	24 W	0445	9.0	274
	0815	8.2	250		0909	7.7	235
	1248	9.3	283		1236	8.1	247
	2034	-2.3	-70		2037	-1.2	-37
10 W	0502	9.9	302	25 Th	0507	9.1	277
	0919	7.9	241		0941	7.5	229
	1347	9.0	274		1336	8.1	247
	2121	-2.3	-70		2114	-1.5	-46
11 Th	0537	9.9	302	26 F	0529	9.2	280
	1015	7.3	223		1012	7.0	213
	1447	8.6	262		1424	8.0	244
	2203	-2.0	-61		2151	-1.5	-46
12 F	0612	9.9	302	27 Sa	0553	9.3	283
	1107	6.7	204		1044	6.4	195
	1545	8.1	247		1527	7.8	238
	2248	-1.4	-43		2226	-1.2	-37
13 Sa	0644	9.7	296	28 Su	0615	9.3	283
	1203	6.0	183		1119	5.6	171
	1644	7.5	229		1624	7.5	229
	2327	-0.6	-18		2302	-0.6	-18
14 Su	0712	9.5	290	29 M	0640	9.4	287
	1255	5.2	158		1202	4.6	140
	1743	6.9	210		1728	7.2	219
					2341	0.4	12
15 M	0003	0.5	15	30 Tu	0703	9.4	287
	0741	9.3	283		1251	3.6	110
	1347	4.4	134		1837	6.7	204
	1844	6.2	189				
				31 W	0016	1.8	55
					0729	9.5	290
					1343	2.5	76
					1957	6.4	195

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0057	3.4	104	16 F	0112	5.4	165
	0758	9.5	290		0739	8.3	253
	1439	1.5	46		1457	1.3	40
	2140	6.3	192		2342	6.5	198
2 F	0139	5.0	152	17 Sa	0154	6.4	195
	0826	9.5	290		0801	8.2	250
	1538	0.6	18		1553	1.0	30
	2345	6.8	207				
3 Sa	0228	6.4	195	18 Su	0833	8.0	244
	0857	9.4	287		1650	0.7	21
	1640	-0.1	-3				
4 Su	0145	7.8	238	19 M	0253	7.9	241
	0358	7.6	232		0607	7.6	232
	0936	9.3	283		0911	7.8	238
	1742	-0.6	-18		1750	0.4	12
5 M	0244	8.6	262	20 Tu	0317	8.3	253
	0555	8.0	244		0733	7.5	229
	1025	9.0	274		1009	7.7	235
	1842	-1.0	-30		1844	0.0	0
6 Tu	0326	9.2	280	21 W	0342	8.5	259
	0725	7.9	241		0815	7.3	223
	1141	8.7	265		1122	7.6	232
	1936	-1.2	-37		1929	-0.3	-9
7 W	0401	9.4	287	22 Th	0357	8.6	262
	0832	7.5	229		0840	6.9	210
	1300	8.5	259		1238	7.6	232
	2024	-1.2	-37		2012	-0.6	-18
8 Th	0433	9.5	290	23 F	0418	8.7	265
	0924	6.8	207		0909	6.3	192
	1409	8.2	250		1350	7.6	232
	2109	-1.0	-30		2051	-0.6	-18
9 F	0505	9.4	287	24 Sa	0436	8.7	265
	1003	6.0	183		0933	5.4	165
	1512	8.0	244		1449	7.7	235
	2147	-0.6	-18		2127	-0.4	-12
10 Sa	0530	9.2	280	25 Su	0454	8.8	268
	1045	5.2	158		1006	4.4	134
	1605	7.6	232		1548	7.7	235
	2226	0.1	3		2204	0.2	6
11 Su	0555	9.1	277	26 M	0517	8.9	271
	1123	4.3	131		1045	3.2	98
	1657	7.2	219		1650	7.6	232
	2301	0.9	27		2241	1.1	34
12 M	0617	8.9	271	27 Tu	0540	9.0	274
	1159	3.5	107		1126	2.0	61
	1752	6.8	207		1754	7.5	229
	2333	1.9	58		2321	2.3	70
13 Tu	0636	8.8	268	28 W	0604	9.1	277
	1241	2.8	85		1212	1.0	30
	1850	6.5	198		1901	7.4	226
14 W	0009	3.0	91				
	0658	8.6	262				
	1323	2.1	64				
	1958	6.3	192				
15 Th	0044	4.2	128				
	0716	8.5	259				
	1407	1.6	49				
	2125	6.2	189				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0000	3.7	113	16 F	0029	5.4	165
	0633	9.2	280		0610	7.8	238
	1303	0.3	9		1305	0.3	9
	2020	7.3	223		2105	7.0	213
2 F	0042	5.0	152	17 Sa	0111	6.2	189
	0703	9.1	277		0633	7.7	235
	1359	-0.2	-6		1351	0.3	9
	2152	7.3	223		2245	7.1	216
3 Sa	0135	6.3	192	18 Su	0223	6.8	207
	0735	9.0	274		0655	7.5	229
	1459	-0.4	-12		1446	0.5	15
	2343	7.7	235				
4 Su	0257	7.2	219	19 M	0039	7.5	229
	0813	8.7	265		0445	7.1	216
	1607	-0.4	-12		0726	7.3	223
					1551	0.6	18
5 M	0109	8.3	253	20 Tu	0136	7.8	238
	0457	7.5	229		1656	0.5	15
	0914	8.3	253				
	1717	-0.3	-9				
6 Tu	0205	8.7	265	21 W	0208	8.0	244
	0639	7.2	219		0724	6.7	204
	1033	7.8	238		0941	6.8	207
	1824	-0.2	-6		1758	0.5	15
7 W	0248	8.9	271	22 Th	0232	8.1	247
	0748	6.6	201		0743	6.1	186
	1209	7.6	232		1123	6.7	204
	1922	0.0	0		1848	0.4	12
8 Th	0320	8.9	271	23 F	0247	8.1	247
	0837	5.8	177		0804	5.4	165
	1330	7.4	226		1250	6.8	207
	2011	0.3	9		1934	0.5	15
9 F	0349	8.8	268	24 Sa	0309	8.2	250
	0909	4.9	149		0826	4.4	134
	1436	7.4	226		1403	7.0	213
	2053	0.7	21		2016	0.8	24
10 Sa	0414	8.7	265	25 Su	0327	8.3	253
	0944	4.0	122		0858	3.1	94
	1533	7.3	223		1508	7.3	223
	2129	1.2	37		2057	1.4	43
11 Su	0435	8.5	259	26 M	0349	8.4	256
	1011	3.1	94		0933	1.7	52
	1625	7.2	219		1611	7.7	235
	2204	1.9	58		2136	2.2	67
12 M	0453	8.3	253	27 Tu	0411	8.6	262
	1043	2.2	67		1012	0.4	12
	1713	7.2	219		1711	8.0	244
	2236	2.7	82		2221	3.3	101
13 Tu	0512	8.2	250	28 W	0438	8.7	265
	1113	1.5	46		1053	-0.7	-21
	1805	7.1	216		1813	8.2	250
	2311	3.6	110		2303	4.4	134
14 W	0530	8.1	247	29 Th	0506	8.8	268
	1147	0.9	27		1139	-1.4	-43
	1857	7.1	216		1919	8.3	253
	2346	4.5	137		2351	5.4	165
15 Th	0547	7.9	241	30 F	0536	8.8	268
	1223	0.5	15		1231	-1.6	-49
	1957	7.0	213		2029	8.3	253
				31 Sa	0047	6.3	192
					0618	8.6	262
					1324	-1.4	-43
					2148	8.3	253

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0203	6.9	210	16	0331	6.8	207
Su	0657	8.2	250	M	0544	6.9	210
	1428	-1.0	-30		1359	-0.2	-6
	2307	8.3	253		2305	7.8	238
2	0358	7.0	213	17	1457	0.2	6
M	0757	7.6	232	Tu	2358	7.8	238
	1538	-0.3	-9				
3	0020	8.5	259	18	1600	0.5	15
Tu	0545	6.5	198	W			
	0915	7.0	213				
	1649	0.3	9				
4	0111	8.6	262	19	0037	7.9	241
W	0654	5.7	174	Th	0655	5.6	171
	1105	6.5	198		0935	5.8	177
	1756	0.8	24		1700	0.9	27
5	0152	8.5	259	20	0105	7.9	241
Th	0742	4.8	146	F	0706	4.7	143
	1240	6.4	195		1128	5.7	174
	1854	1.3	40		1757	1.4	43
6	0224	8.4	256	21	0128	8.0	244
F	0818	3.8	116	Sa	0724	3.5	107
	1357	6.6	201		1308	6.0	183
	1942	1.9	58		1846	2.0	61
7	0250	8.2	250	22	0149	8.1	247
Sa	0846	2.8	85	Su	0753	2.1	64
	1501	6.8	207		1423	6.6	201
	2025	2.6	79		1935	2.8	85
8	0311	8.0	244	23	0214	8.2	250
Su	0915	1.9	58	M	0826	0.6	18
	1554	7.0	213		1529	7.3	223
	2100	3.2	98		2024	3.6	110
9	0329	7.8	238	24	0238	8.4	256
M	0939	1.0	30	Tu	0904	-0.9	-27
	1643	7.2	219		1631	8.0	244
	2139	3.9	119		2110	4.5	137
10	0345	7.7	235	25	0304	8.6	262
Tu	1005	0.2	6	W	0943	-2.0	-61
	1728	7.4	226		1730	8.5	259
	2218	4.6	140		2202	5.4	165
11	0359	7.6	232	26	0336	8.7	265
W	1033	-0.4	-12	Th	1028	-2.8	-85
	1817	7.6	232		1825	8.9	271
	2257	5.2	158		2254	6.1	186
12	0416	7.5	229	27	0415	8.7	265
Th	1106	-0.8	-24	F	1117	-3.0	-91
	1903	7.7	235		1924	9.0	274
	2341	5.8	177		2352	6.5	198
13	0438	7.4	226	28	0454	8.4	256
F	1141	-0.9	-27	Sa	1206	-2.7	-82
	1952	7.8	238		2027	9.0	274
14	0029	6.3	192	29	0106	6.8	207
Sa	0503	7.3	223	Su	0539	8.0	244
	1220	-0.8	-24		1302	-2.1	-64
	2054	7.8	238		2129	8.9	271
15	0132	6.6	201	30	0244	6.6	201
Su	0522	7.1	216	M	0638	7.3	223
	1305	-0.6	-18		1402	-2.1	-34
	2200	7.7	235		2228	8.7	265

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0427	6.0	183	16	1409	-0.1	-3
Tu	0751	6.5	198	W	2239	8.2	250
	1505	-0.1	-3				
	2324	8.6	262				
2	0543	5.1	155	17	0546	5.3	162
W	0930	5.8	177	Th	0733	5.4	165
	1610	0.9	27		1503	0.7	21
					2312	8.2	250
3	0011	8.5	259	18	0556	4.3	131
Th	0642	4.0	122	F	0943	5.0	152
	1121	5.5	168		1559	1.6	49
	1715	1.9	58		2339	8.2	250
4	0046	8.4	256	19	0617	3.1	94
F	0717	3.0	91	Sa	1145	5.1	155
	1300	5.6	171		1658	2.7	82
	1811	2.8	85				
5	0116	8.2	250	20	0006	8.3	253
Sa	0749	2.0	61	Su	0646	1.6	49
	1418	6.1	186		1328	5.8	177
	1903	3.7	113		1757	3.8	116
6	0139	7.9	241	21	0030	8.4	256
Su	0817	1.0	30	M	0718	0.1	3
	1524	6.6	201		1445	6.7	204
	1952	4.4	134		1856	4.8	146
7	0157	7.7	235	22	0057	8.6	262
M	0839	0.2	6	Tu	0757	-1.4	-43
	1615	7.2	219		1554	7.7	235
	2037	5.1	155		1952	5.7	174
8	0213	7.6	232	23	0129	8.8	268
Tu	0904	-0.6	-18	W	0839	-2.6	-79
	1701	7.6	232		1646	8.5	259
	2123	5.7	174		2051	6.4	195
9	0227	7.5	229	24	0205	8.9	271
W	0933	-1.2	-37	Th	0924	-3.4	-104
	1743	8.0	244		1738	9.1	277
	2208	6.1	186		2146	6.8	207
10	0242	7.4	226	25	0244	8.8	268
Th	1001	-1.6	-49	F	1010	-3.7	-113
	1822	8.2	250		1829	9.3	283
	2251	6.4	195		2247	7.0	213
11	0307	7.3	223	26	0333	8.6	262
F	1037	-1.8	-55	Sa	1058	-3.5	-107
	1904	8.3	253		1913	9.4	287
	2340	6.6	201		2357	6.9	210
12	0333	7.2	219	27	0428	8.1	247
Sa	1112	-1.8	-55	Su	1148	-3.0	-91
	1946	8.3	253		2008	9.3	283
13	0039	6.7	204	28	0113	6.5	198
Su	0354	7.0	213	M	0527	7.4	226
	1151	-1.6	-49		1241	-2.0	-61
	2032	8.3	253		2056	9.1	277
14	0210	6.7	204	29	0245	5.8	177
M	0409	6.8	207	Tu	0623	6.6	201
	1234	-1.3	-40		1334	-0.9	-27
	2117	8.2	250		2143	8.9	271
15	1322	-0.8	-24	30	0405	4.9	149
Tu	2203	8.2	250	W	0752	5.7	174
					1428	0.4	12
					2223	8.8	268
				31	0507	3.8	116
				Th	0935	5.1	155
					1524	1.7	52
					2302	8.6	262

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0556	2.7	82	16	0450	3.0	91
F	1131	4.9	149	Sa	1004	4.7	143
	1623	3.0	91		1506	2.7	82
	2330	8.3	253		2227	8.6	262
2	0638	1.7	52	17	0525	1.6	49
Sa	1321	5.4	165	Su	1214	5.2	158
	1718	4.2	128		1605	4.2	128
	2358	8.1	247		2251	8.7	265
3	0708	0.7	21	18	0607	0.1	3
Su	1440	6.2	189	M	1357	6.2	189
	1824	5.2	158		1711	5.5	168
					2321	8.9	271
4	0019	7.9	241	19	0651	-1.2	-37
M	0737	-0.1	-3	Tu	1510	7.3	223
	1539	7.0	213		1824	6.5	198
	1923	6.0	183		2355	9.0	274
5	0034	7.8	238	20	0734	-2.4	-73
Tu	0806	-0.8	-24	W	1605	8.2	250
	1628	7.6	232		1933	7.1	216
	2015	6.5	198				
6	0056	7.7	235	21	0034	9.0	274
W	0832	-1.4	-43	Th	0820	-3.2	-98
	1709	8.1	247		1651	8.9	271
	2112	6.8	207		2039	7.3	223
7	0118	7.6	232	22	0123	9.0	274
Th	0904	-1.8	-55	F	0908	-3.6	-110
	1745	8.4	256		1736	9.2	280
	2203	6.9	210		2139	7.2	219
8	0143	7.5	229	23	0218	8.7	265
F	0938	-2.1	-64	Sa	0956	-3.6	-110
	1817	8.5	259		1815	9.3	283
	2251	7.0	213		2242	6.9	210
9	0215	7.4	226	24	0321	8.3	253
Sa	1014	-2.2	-67	Su	1045	-3.2	-98
	1852	8.6	262		1856	9.3	283
	2339	6.9	210		2345	6.3	192
10	0254	7.2	219	25	0423	7.7	235
Su	1051	-2.2	-67	M	1131	-2.4	-73
	1924	8.6	262		1935	9.2	280
11	0039	6.7	204	26	0054	5.6	171
M	0332	6.9	210	Tu	0529	7.0	213
	1130	-2.0	-61		1218	-1.4	-43
	1959	8.6	262		2013	9.0	274
12	0138	6.5	198	27	0206	4.8	146
Tu	0414	6.6	201	W	0638	6.1	186
	1209	-1.5	-46		1300	-0.1	-3
	2032	8.6	262		2048	8.9	271
13	0237	6.0	183	28	0312	3.8	116
W	0513	6.1	186	Th	0754	5.4	165
	1250	-0.8	-24		1345	1.3	40
	2104	8.6	262		2120	8.7	265
14	0339	5.2	158	29	0411	2.8	85
Th	0629	5.5	168	F	0931	4.9	149
	1330	0.1	3		1435	2.7	82
	2133	8.6	262		2149	8.4	256
15	0418	4.2	128	30	0500	1.9	58
F	0809	4.9	149	Sa	1136	5.0	152
	1416	1.3	40		1524	4.1	125
	2200	8.6	262		2213	8.2	250

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

PORT TOWNSEND, WASHINGTON, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0541	1.0	30	16 M	0433	0.3	9
	1336	5.8	177		1243	5.9	180
	1633	5.4	165		1523	5.6	171
	2235	8.0	244		2152	8.9	271
2 M	0620	0.2	6	17 Tu	0531	-0.8	-24
	1455	6.7	204		1419	7.0	213
	1748	6.3	192		1642	6.7	204
	2300	7.9	241		2227	8.9	271
3 Tu	0656	-0.4	-12	18 W	0627	-1.7	-52
	1544	7.5	229		1515	7.9	241
	1904	6.8	207		1816	7.3	223
	2321	7.7	235		2316	8.9	271
4 W	0731	-1.0	-30	19 Th	0718	-2.3	-70
	1625	8.0	244		1600	8.5	259
	2013	7.1	216		1931	7.4	226
	2353	7.7	235				
5 Th	0808	-1.4	-43	20 F	0015	8.8	268
	1657	8.3	253		0809	-2.7	-82
	2109	7.1	216		1637	8.9	271
					2039	7.2	219
6 F	0035	7.6	232	21 Sa	0124	8.6	262
	0843	-1.7	-52		0859	-2.9	-85
	1730	8.5	259		1713	9.0	274
	2153	7.0	213		2135	6.6	201
7 Sa	0117	7.5	229	22 Su	0230	8.3	253
	0921	-2.0	-61		0946	-2.6	-79
	1753	8.5	259		1748	9.0	274
	2229	6.8	207		2227	5.9	180
8 Su	0206	7.3	223	23 M	0333	7.9	241
	0957	-2.1	-64		1029	-2.0	-61
	1821	8.5	259		1820	8.9	271
	2304	6.5	198		2325	5.1	155
9 M	0258	7.1	216	24 Tu	0435	7.3	223
	1033	-2.0	-61		1111	-1.2	-37
	1847	8.6	262		1850	8.8	268
	2343	6.1	186				
10 Tu	0351	6.8	207	25 W	0015	4.3	131
	1109	-1.7	-52		0537	6.7	204
	1913	8.6	262		1153	-0.1	-3
					1919	8.6	262
11 W	0028	5.5	168	26 Th	0107	3.4	104
	0446	6.4	195		0639	6.1	186
	1144	-1.1	-34		1228	1.2	37
	1940	8.6	262		1945	8.4	256
12 Th	0114	4.8	146	27 F	0206	2.6	79
	0549	5.9	180		0753	5.6	171
	1221	-0.1	-3		1311	2.5	76
	2004	8.6	262		2009	8.2	250
13 F	0205	3.8	116	28 Sa	0255	1.9	58
	0706	5.5	168		0924	5.3	162
	1300	1.1	34		1355	3.9	119
	2030	8.7	265		2035	8.1	247
14 Sa	0255	2.7	82	29 Su	0343	1.3	40
	0836	5.1	155		1127	5.6	171
	1339	2.6	79		1446	5.1	155
	2055	8.7	265		2057	7.9	241
15 Su	0347	1.5	46	30 M	0435	0.7	21
	1029	5.2	158		1340	6.3	192
	1424	4.2	128		1600	6.1	186
	2123	8.8	268		2122	7.7	235
				31 Tu	0524	0.2	6
					1442	7.1	216
					1743	6.7	204
					2154	7.5	229

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0613	-0.2	-6	16 Th	0608	-1.3	-40
	1524	7.7	235		1455	8.2	250
	1909	6.9	210		1842	7.2	219
	2236	7.4	226		2314	8.2	250
2 Th	0700	-0.6	-18	17 F	0705	-1.5	-46
	1557	8.0	244		1530	8.5	259
	2009	6.9	210		1948	6.7	204
	2331	7.3	223				
3 F	0742	-0.9	-27	18 Sa	0031	8.0	244
	1625	8.2	250		0800	-1.5	-46
	2053	6.7	204		1603	8.6	262
					2040	6.0	183
4 Sa	0033	7.3	223	19 Su	0149	7.9	241
	0824	-1.2	-37		0846	-1.3	-40
	1649	8.2	250		1634	8.5	259
	2124	6.4	195		2125	5.1	155
5 Su	0132	7.2	219	20 M	0255	7.7	235
	0859	-1.4	-43		0928	-0.9	-27
	1711	8.2	250		1703	8.4	256
	2153	6.0	183		2211	4.2	128
6 M	0226	7.2	219	21 Tu	0354	7.4	226
	0938	-1.5	-46		1007	-0.2	-6
	1729	8.2	250		1728	8.3	253
	2225	5.4	165		2253	3.3	101
7 Tu	0321	7.0	213	22 W	0451	7.1	216
	1013	-1.2	-37		1048	0.7	21
	1752	8.3	253		1753	8.2	250
	2259	4.6	140		2332	2.5	76
8 W	0414	6.8	207	23 Th	0548	6.7	204
	1045	-0.7	-21		1125	1.7	52
	1815	8.4	256		1814	8.0	244
	2339	3.7	113				
9 Th	0515	6.6	201	24 F	0014	1.8	55
	1121	0.2	6		0646	6.5	198
	1841	8.4	256		1202	2.8	85
					1836	7.8	238
10 F	0021	2.8	85	25 Sa	0053	1.2	37
	0620	6.3	192		0751	6.3	192
	1159	1.4	43		1244	4.0	122
	1904	8.5	259		1857	7.7	235
11 Sa	0106	1.8	55	26 Su	0140	0.8	24
	0729	6.0	183		0912	6.2	189
	1234	2.8	85		1327	5.1	155
	1931	8.5	259		1919	7.5	229
12 Su	0159	0.9	27	27 M	0230	0.6	18
	0858	6.0	183		1055	6.4	195
	1316	4.3	131		1436	5.9	180
	1956	8.6	262		1948	7.3	223
13 M	0256	0.1	3	28 Tu	0326	0.5	15
	1051	6.2	189		1254	6.9	210
	1408	5.6	171		1625	6.5	198
	2027	8.6	262		2015	7.1	216
14 Tu	0359	-0.5	-15	29 W	0425	0.4	12
	1248	6.9	210		1357	7.4	226
	1521	6.7	204		1807	6.6	201
	2107	8.5	259		2105	6.9	210
15 W	0505	-1.0	-30	30 Th	0526	0.3	9
	1407	7.7	235		1439	7.7	235
	1712	7.2	219		1920	6.5	198
	2158	8.4	256		2213	6.8	207
				31 F	0624	0.0	0
					1507	7.8	238
					2002	6.2	189
					2329	6.7	204

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0713	-0.2	-6	16 Su	0109	7.1	216
	1532	7.9	241		0741	0.1	3
	2027	5.8	177		1517	8.3	253
					2039	4.2	128
2 Su	0043	6.8	207	17 M	0218	7.2	219
	0755	-0.4	-12		0827	0.6	18
	1551	7.9	241		1543	8.2	250
	2051	5.2	158		2114	3.2	98
3 M	0147	6.9	210	18 Tu	0319	7.2	219
	0831	-0.3	-9		0909	1.3	40
	1609	7.9	241		1605	8.0	244
	2117	4.4	134		2145	2.2	67
4 Tu	0243	7.0	213	19 W	0415	7.2	219
	0910	-0.1	-3		0948	2.0	61
	1627	8.0	244		1626	7.8	238
	2145	3.4	104		2218	1.3	40
5 W	0340	7.0	213	20 Th	0507	7.2	219
	0945	0.4	12		1026	2.9	88
	1649	8.1	247		1645	7.7	235
	2218	2.4	73		2250	0.6	18
6 Th	0437	7.1	216	21 F	0559	7.2	219
	1021	1.2	37		1101	3.8	116
	1712	8.2	250		1701	7.5	229
	2300	1.3	40		2325	0.1	3
7 F	0536	7.1	216	22 Sa	0652	7.2	219
	1058	2.3	70		1144	4.6	140
	1735	8.3	253		1719	7.4	226
	2342	0.3	9		2359	-0.2	-6
8 Sa	0641	7.1	216	23 Su	0747	7.2	219
	1137	3.5	107		1230	5.4	165
	1802	8.3	253		1741	7.2	219
9 Su	0027	-0.4	-12	24 M	0039	-0.2	-6
	0754	7.1	216		0853	7.2	219
	1221	4.7	143		1327	6.0	183
	1828	8.3	253		1805	7.0	213
10 M	0119	-0.8	-24	25 Tu	0124	-0.1	-3
	0913	7.2	219		1016	7.3	223
	1314	5.8	177		1512	6.5	198
	1903	3.3	253		1831	6.8	207
11 Tu	0218	-0.9	-27	26 W	0220	0.2	6
	1049	7.4	226		1145	7.4	226
	1430	6.6	201				
	1945	8.1	247				
12 W	0326	-0.8	-24	27 Th	0325	0.5	15
	1222	7.8	238		1251	7.6	232
	1623	7.0	213				
	2038	7.7	235				
13 Th	0436	-0.6	-18	28 F	0433	0.6	18
	1325	8.2	250		1329	7.7	235
	1805	6.7	204		1918	5.8	177
	2203	7.4	226		2151	6.0	183
14 F	0547	-0.5	-15	29 Sa	0538	0.7	21
	1406	8.3	253		1355	7.8	238
	1911	6.0	183		1936	5.3	162
	2343	7.2	219		2327	6.0	183
15 Sa	0649	-0.2	-6	30 Su	0630	0.8	24
	1445	8.4	256		1416	7.8	238
	1957	5.1	155		1955	4.5	137

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0051	6.2	189	16 Tu	0247	6.9	210
	0712	1.0	30		0801	2.9	88
	1438	7.8	238		1441	8.1	247
	2016	3.6	110		2051	1.3	40
2 Tu	0200	6.5	198	17 W	0346	7.2	219
	0754	1.4	43		0843	3.7	113
	1458	7.9	241		1500	7.9	241
	2042	2.4	73		2117	0.4	12
3 W	0300	6.9	210	18 Th	0437	7.6	232
	0836	1.9	58		0926	4.4	134
	1516	8.0	244		1517	7.7	235
	2110	1.1	34		2144	-0.3	-9
4 Th	0359	7.3	223	19 F	0525	7.8	238
	0915	2.7	82		1005	5.1	155
	1539	8.1	247		1529	7.6	232
	2149	-0.1	-3		2213	-0.9	-27
5 F	0455	7.8	238	20 Sa	0608	8.0	244
	0957	3.6	110		1049	5.7	174
	1603	8.3	253		1545	7.4	226
	2227	-1.1	-34		2245	-1.2	-37
6 Sa	0554	8.1	247	21 Su	0656	8.2	250
	1039	4.6	140		1135	6.1	186
	1629	8.4	256		1603	7.3	223
	2309	-1.8	-55		2320	-1.2	-37
7 Su	0656	8.3	253	22 M	0742	8.2	250
	1128	5.5	168		1231	6.5	198
	1700	8.4	256		1625	7.1	216
	2357	-2.1	-64		2358	-1.0	-30
8 M	0806	8.4	256	23 Tu	0834	8.1	247
	1220	6.3	192		1353	6.7	204
	1735	8.2	250		1642	6.9	210
9 Tu	0050	-1.9	-58	24 W	0042	-0.7	-21
	0915	8.4	256		0933	8.1	247
	1335	6.8	207				
	1820	7.9	241				
10 W	0148	-1.4	-43	25 Th	0131	-0.2	-6
	1031	8.4	256		1035	8.1	247
	1525	6.8	207				
	1919	7.4	226				
11 Th	0256	-0.7	-21	26 F	0229	0.4	12
	1135	8.5	259		1127	8.1	247
	1715	6.3	192				
	2045	6.8	207				
12 F	0409	0.0	0	27 Sa	0330	0.9	27
	1232	8.5	259		1203	8.1	247
	1824	5.4	165		1849	5.1	155
	2232	6.4	195		2136	5.3	162
13 Sa	0519	0.7	21	28 Su	0433	1.5	46
	1314	8.5	259		1235	8.1	247
	1913	4.4	134		1901	4.2	128
					2330	5.3	162
14 Su	0015	6.3	192	29 M	0531	2.1	64
	0622	1.4	43		1257	8.1	247
	1347	8.4	256		1918	3.2	98
	1947	3.3	101				
15 M	0137	6.5	198	30 Tu	0104	5.8	177
	0712	2.1	64		0623	2.7	82
	1416	8.3	253		1317	8.2	250
	2019	2.3	70		1941	1.9	58
				31 W	0217	6.5	198
					0712	3.5	107
					1341	8.3	253
					2008	0.4	12

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0319	7.3	223	16 F	0452	8.3	253
	0757	4.4	134		0913	6.4	195
	1404	8.5	259		1359	7.9	241
	2040	-0.9	-27		2113	-1.2	-37
2 F	0418	8.1	247	17 Sa	0534	8.7	265
	0847	5.2	158		0959	6.8	207
	1429	8.7	265		1416	7.8	238
	2120	-2.1	-64		2145	-1.6	-49
3 Sa	0513	8.7	265	18 Su	0612	8.9	271
	0936	5.9	180		1048	7.0	213
	1500	8.8	268		1434	7.6	232
	2202	-2.9	-88		2217	-1.7	-52
4 Su	0606	9.1	277	19 M	0651	8.9	271
	1027	6.5	198		1139	7.1	216
	1532	8.8	268		1500	7.5	229
	2247	-3.2	-98		2252	-1.7	-52
5 M	0701	9.3	283	20 Tu	0730	8.9	271
	1123	6.9	210		1241	7.1	216
	1610	8.6	262		1521	7.3	223
	2336	-3.0	-91		2330	-1.4	-43
6 Tu	0757	9.4	287	21 W	0812	8.9	271
	1230	7.1	216				
	1659	8.2	250				
7 W	0028	-2.3	-70	22 Th	0012	-1.0	-30
	0856	9.3	283		0851	8.8	268
	1400	6.9	210				
	1758	7.6	232				
8 Th	0125	-1.4	-43	23 F	0056	-0.4	-12
	0954	9.2	280		0933	8.7	265
	1553	6.3	192				
	1917	6.8	207				
9 F	0227	-0.2	-6	24 Sa	0141	0.4	12
	1047	9.1	277		1011	8.7	265
	1713	5.3	162				
	2057	6.0	183				
10 Sa	0330	1.0	30	25 Su	0230	1.3	40
	1131	9.0	274		1040	8.7	265
	1811	4.1	125		1800	4.4	134
	2253	5.7	174		2127	4.9	149
11 Su	0439	2.1	64	26 M	0323	2.4	73
	1209	8.8	268		1108	8.7	265
	1854	2.9	88		1808	3.3	101
					2339	5.1	155
12 M	0041	5.9	180	27 Tu	0421	3.5	107
	0541	3.3	101		1133	8.7	265
	1245	8.7	265		1833	1.9	58
	1926	1.8	55				
13 Tu	0205	6.5	198	28 W	0125	5.9	180
	0640	4.3	131		0524	4.7	143
	1309	8.4	256		1200	8.9	271
	1954	0.8	24		1901	0.4	12
14 W	0314	7.2	219	29 Th	0242	6.9	210
	0735	5.2	158		0626	5.7	174
	1331	8.2	250		1223	9.0	274
	2019	0.0	0		1937	-1.0	-30
15 Th	0406	7.8	238	30 F	0341	8.0	244
	0824	5.9	180		0728	6.6	201
	1346	8.0	244		1253	9.2	280
	2048	-0.7	-21		2019	-2.2	-67

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0433	8.9	271	16 Su	0532	9.2	280
	0824	7.2	219		1005	7.6	232
	1317	9.4	287		1320	8.0	244
	2058	-3.1	-94		2124	-1.6	-49
2 Su	0521	9.5	290	17 M	0604	9.3	283
	0920	7.5	229		1051	7.5	229
	1409	9.4	287		1355	7.8	238
	2145	-3.5	-107		2158	-1.7	-52
3 M	0607	9.9	302	18 Tu	0635	9.3	283
	1019	7.6	232		1137	7.4	226
	1459	9.2	280		1444	7.7	235
	2232	-3.5	-107		2234	-1.6	-49
4 Tu	0653	10.0	305	19 W	0707	9.3	283
	1120	7.5	229		1219	7.1	216
	1548	8.8	268		1523	7.4	226
	2321	-3.0	-91		2313	-1.4	-43
5 W	0737	9.9	302	20 Th	0736	9.2	280
	1235	7.1	216		1318	6.8	207
	1654	8.2	250		1609	7.0	213
					2348	-0.9	-27
6 Th	0010	-2.1	-64	21 F	0805	9.2	280
	0823	9.8	299		1413	6.3	192
	1355	6.4	195		1700	6.5	198
	1806	7.3	223				
7 F	0103	-0.8	-24	22 Sa	0027	-0.2	-6
	0906	9.6	293		0833	9.2	280
	1521	5.4	165		1512	5.6	171
	1922	6.4	195		1813	5.9	180
8 Sa	0155	0.6	18	23 Su	0059	0.8	24
	0948	9.5	290		0902	9.2	280
	1633	4.3	131		1551	4.6	140
	2105	5.6	171		1942	5.3	162
9 Su	0250	2.1	64	24 M	0139	2.1	64
	1027	9.3	283		0929	9.2	280
	1729	3.1	94		1630	3.5	107
	2303	5.4	165		2137	5.0	152
10 M	0346	3.6	110	25 Tu	0217	3.5	107
	1100	9.1	277		0953	9.2	280
	1811	1.9	58		1705	2.2	67
					2358	5.4	165
11 Tu	0104	6.0	183	26 W	0310	4.9	149
	0449	5.0	152		1019	9.3	283
	1129	8.8	268		1744	0.9	27
	1847	1.0	30				
12 W	0230	6.9	210	27 Th	0157	6.6	201
	0601	6.1	186		0417	6.3	192
	1153	8.6	262		1045	9.4	287
	1922	0.2	6		1826	-0.5	-15
13 Th	0335	7.8	238	28 F	0307	7.8	238
	0707	6.9	210		0547	7.4	226
	1210	8.4	256		1117	9.6	293
	1952	-0.5	-15		1913	-1.6	-49
14 F	0421	8.5	259	29 Sa	0356	8.8	268
	0813	7.4	226		0703	8.0	244
	1230	8.2	250		1158	9.6	293
	2021	-1.0	-30		1957	-2.5	-76
15 Sa	0457	9.0	274	30 Su	0434	9.5	290
	0911	7.6	232		0812	8.2	250
	1250	8.1	247		1253	9.6	293
	2051	-1.3	-40		2045	-3.0	-91
				31 M	0513	9.9	302
					0912	8.0	244
					1349	9.5	290
					2132	-3.2	-98

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SEATTLE, WASHINGTON, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0057	-0.5	-15	16 Tu	0142	2.1	64
	0811	12.9	393		0835	12.2	372
	1418	5.5	168		1506	4.0	122
	1906	9.2	280		2040	8.3	253
2 Tu	0140	0.7	21	17 W	0221	3.6	110
	0841	12.9	393		0904	11.7	357
	1506	4.4	134		1555	3.3	101
	2019	8.6	262		2201	8.0	244
3 W	0224	2.3	70	18 Th	0306	5.1	155
	0914	12.7	387		0936	11.3	344
	1601	3.1	94		1651	2.6	79
	2143	8.3	253		2343	8.2	250
4 Th	0313	4.0	122	19 F	0359	6.6	201
	0950	12.5	381		1009	10.8	329
	1657	1.8	55		1745	1.9	58
	2323	8.4	256				
5 F	0415	5.7	174	20 Sa	0127	8.8	268
	1029	12.3	375		0511	7.7	235
	1757	0.5	15		1049	10.4	317
					1839	1.2	37
6 Sa	0109	9.2	280	21 Su	0243	9.7	296
	0526	7.2	219		0644	8.4	256
	1113	12.0	366		1128	10.2	311
	1855	-0.7	-21		1927	0.5	15
7 Su	0236	10.3	314	22 M	0342	10.5	320
	0647	8.2	250		0805	8.7	265
	1202	11.8	360		1217	10.1	308
	1951	-1.7	-52		2015	-0.1	-3
8 M	0342	11.3	344	23 Tu	0424	11.2	341
	0810	8.6	262		0907	8.6	262
	1257	11.6	354		1306	10.1	308
	2042	-2.4	-73		2056	-0.7	-21
9 Tu	0434	12.1	369	24 W	0456	11.7	357
	0921	8.5	259		0950	8.3	253
	1353	11.5	351		1358	10.2	311
	2132	-2.7	-82		2135	-1.1	-34
10 W	0519	12.7	387	25 Th	0521	12.0	366
	1017	8.1	247		1025	7.9	241
	1452	11.3	344		1447	10.3	314
	2219	-2.7	-82		2211	-1.4	-43
11 Th	0557	13.0	396	26 F	0545	12.3	375
	1109	7.6	232		1100	7.3	223
	1545	11.0	335		1539	10.4	317
	2302	-2.3	-70		2245	-1.4	-43
12 F	0633	13.1	399	27 Sa	0608	12.6	384
	1155	6.9	210		1136	6.5	198
	1636	10.6	323		1624	10.5	320
	2343	-1.6	-49		2322	-1.1	-34
13 Sa	0705	13.0	396	28 Su	0629	12.7	387
	1243	6.2	189		1214	5.5	168
	1736	10.1	308		1717	10.4	317
					2359	-0.4	-12
14 Su	0021	-0.6	-18	29 M	0653	12.9	393
	0737	12.8	390		1253	4.4	134
	1329	5.5	168		1813	10.1	308
	1831	9.5	290				
15 M	0100	0.7	21	30 Tu	0038	0.7	21
	0806	12.5	381		0721	12.9	393
	1418	4.7	143		1339	3.2	98
	1931	8.8	268		1916	9.7	296
				31 W	0120	2.1	64
					0750	12.8	390
					1427	2.2	67
					2026	9.3	283

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0202	3.7	113	16 F	0232	5.9	180
	0823	12.6	384		0829	10.7	326
	1520	1.2	37		1541	1.8	55
	2149	9.1	277		2254	8.8	268
2 F	0251	5.4	165	17 Sa	0326	7.0	213
	0901	12.2	372		0901	10.2	311
	1619	0.4	12		1639	1.6	49
	2325	9.2	280				
3 Sa	0351	7.0	213	18 Su	0041	9.1	277
	0943	11.8	360		0435	8.0	244
	1723	-0.2	-6		0936	9.8	299
					1739	1.3	40
4 Su	0114	9.8	299	19 M	0203	9.7	296
	0512	8.2	250		0614	8.5	259
	1037	11.4	347		1036	9.6	293
	1829	-0.8	-24		1842	0.9	27
5 M	0233	10.6	323	20 Tu	0302	10.4	317
	0654	8.6	262		0747	8.4	256
	1137	11.0	335		1141	9.4	287
	1935	-1.2	-37		1937	0.4	12
6 Tu	0333	11.4	347	21 W	0340	10.9	332
	0822	8.4	256		0842	8.0	244
	1250	10.7	326		1250	9.5	290
	2032	-1.5	-46		2024	-0.1	-3
7 W	0417	12.0	366	22 Th	0409	11.4	347
	0926	7.8	238		0924	7.4	226
	1358	10.6	323		1346	9.7	296
	2121	-1.6	-49		2106	-0.4	-12
8 Th	0454	12.4	378	23 F	0432	11.7	357
	1015	7.0	213		0958	6.5	198
	1500	10.5	320		1445	10.0	305
	2207	-1.3	-40		2144	-0.5	-15
9 F	0528	12.5	381	24 Sa	0452	11.9	363
	1059	6.1	186		1032	5.5	168
	1557	10.4	317		1540	10.3	314
	2245	-0.8	-24		2223	-0.2	-6
10 Sa	0556	12.5	381	25 Su	0512	12.2	372
	1136	5.2	158		1107	4.2	128
	1649	10.3	314		1632	10.6	323
	2324	-0.1	-3		2258	0.3	9
11 Su	0622	12.4	378	26 M	0534	12.3	375
	1214	4.4	134		1141	2.9	88
	1740	10.0	305		1727	10.8	329
	2359	0.9	27		2340	1.3	40
12 M	0645	12.2	372	27 Tu	0601	12.4	378
	1249	3.7	113		1221	1.7	52
	1830	9.7	296		1823	10.7	326
13 Tu	0035	2.1	64	28 W	0020	2.5	76
	0710	11.9	363		0628	12.4	378
	1328	3.0	91		1303	0.6	18
	1923	9.4	287		1925	10.6	323
14 W	0110	3.3	101				
	0733	11.5	351				
	1407	2.5	76				
	2023	9.1	277				
15 Th	0149	4.6	140				
	0758	11.1	338				
	1453	2.1	64				
	2131	8.8	268				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0102	3.9	119	16 F	0130	5.7	174
	0701	12.3	375		0658	10.4	317
	1352	-0.1	-3		1400	0.8	24
	2031	10.3	314		2106	9.7	296
2 F	0150	5.3	162	17 Sa	0215	6.6	201
	0736	12.0	366		0730	10.0	305
	1445	-0.5	-15		1448	0.9	27
	2153	10.0	305		2218	9.6	293
3 Sa	0242	6.6	201	18 Su	0308	7.3	223
	0817	11.5	351		0805	9.6	293
	1545	-0.5	-15		1541	1.0	30
	2323	10.0	305		2348	9.6	293
4 Su	0351	7.7	235	19 M	0421	7.9	241
	0906	10.9	332		0847	9.2	280
	1655	-0.4	-12		1644	1.1	34
5 M	0059	10.3	314	20 Tu	0101	10.0	305
	0529	8.2	250		0555	8.0	244
	1015	10.2	311		0953	8.8	268
	1809	-0.3	-9		1747	1.1	34
6 Tu	0212	10.9	332	21 W	0156	10.4	317
	0714	7.9	241		0718	7.6	232
	1134	9.7	296		1112	8.6	262
	1915	-0.3	-9		1849	0.9	27
7 W	0302	11.4	347	22 Th	0233	10.7	326
	0829	7.0	213		0810	6.8	207
	1300	9.6	293		1235	8.7	265
	2017	-0.2	-6		1941	0.8	24
8 Th	0342	11.7	357	23 F	0302	11.0	335
	0921	6.0	183		0849	5.7	174
	1417	9.6	293		1344	9.1	277
	2106	0.1	3		2030	0.9	27
9 F	0416	11.9	363	24 Sa	0323	11.3	344
	1000	5.0	152		0923	4.4	134
	1519	9.8	299		1446	9.7	296
	2148	0.5	15		2112	1.2	37
10 Sa	0443	11.8	360	25 Su	0347	11.5	351
	1038	4.0	122		0955	3.0	91
	1612	10.0	305		1544	10.3	314
	2226	1.2	37		2154	1.7	52
11 Su	0507	11.7	357	26 M	0411	11.7	357
	1107	3.1	94		1031	1.5	46
	1701	10.1	308		1640	10.9	332
	2303	2.0	61		2236	2.5	76
12 M	0528	11.5	351	27 Tu	0438	11.9	363
	1139	2.3	70		1109	0.0	0
	1747	10.2	311		1735	11.3	344
	2337	2.8	85		2320	3.5	107
13 Tu	0549	11.3	344	28 W	0506	12.0	366
	1211	1.7	52		1151	-1.1	-34
	1830	10.2	311		1831	11.5	351
14 W	0012	3.8	116	29 Th	0004	4.5	137
	0609	11.0	335		0540	11.9	363
	1243	1.2	37		1234	-1.7	-52
	1918	10.1	308		1930	11.4	347
15 Th	0051	4.7	143	30 F	0052	5.6	171
	0633	10.7	326		0617	11.7	357
	1321	0.9	27		1323	-1.9	-58
	2006	9.9	302		2036	11.2	341
				31 Sa	0145	6.6	201
					0656	11.2	341
					1417	-1.6	-49
					2151	10.9	332

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0248	7.3	223	16 M	0300	7.5	229
	0748	10.5	320		0717	9.0	274
	1517	-1.0	-30		1456	0.3	9
	2311	10.8	329		2249	10.5	320
2 M	0412	7.6	232	17 Tu	0414	7.5	229
	0851	9.7	296		0811	8.5	259
	1627	-0.3	-9		1549	0.7	21
					2348	10.6	323
3 Tu	0024	10.9	332	18 W	0536	7.2	219
	0557	7.3	223		0927	8.0	244
	1013	8.9	271		1651	1.1	34
	1739	0.4	12				
4 W	0124	11.1	338	19 Th	0034	10.8	329
	0721	6.3	192		0645	6.3	192
	1153	8.5	259		1100	7.8	238
	1849	1.0	30		1753	1.6	49
5 Th	0214	11.3	344	20 F	0112	10.9	332
	0817	5.1	155		0731	5.1	155
	1326	8.6	262		1226	8.1	247
	1949	1.5	46		1849	2.1	64
6 F	0253	11.4	347	21 Sa	0143	11.1	338
	0902	4.0	122		0809	3.7	113
	1439	9.0	274		1342	8.7	265
	2040	2.1	64		1945	2.7	82
7 Sa	0322	11.3	344	22 Su	0210	11.2	341
	0937	2.9	88		0845	2.1	64
	1536	9.5	290		1450	9.6	293
	2126	2.8	85		2036	3.3	101
8 Su	0348	11.1	338	23 M	0239	11.4	347
	1009	1.9	58		0923	0.4	12
	1625	9.9	302		1551	10.5	320
	2204	3.5	107		2125	4.1	125
9 M	0408	10.9	332	24 Tu	0310	11.6	354
	1038	1.1	34		1002	-1.1	-34
	1710	10.3	314		1648	11.3	344
	2243	4.2	128		2217	4.9	149
10 Tu	0428	10.7	326	25 W	0342	11.7	357
	1106	0.5	15		1041	-2.3	-70
	1752	10.6	323		1744	11.8	360
	2318	4.8	146		2303	5.7	174
11 W	0447	10.5	320	26 Th	0417	11.7	357
	1135	0.0	0		1125	-3.1	-94
	1831	10.7	326		1836	12.1	369
	2354	5.5	168		2353	6.3	192
12 Th	0512	10.3	314	27 F	0457	11.6	354
	1207	-0.3	-9		1211	-3.3	-101
	1913	10.8	329		1935	12.1	369
13 F	0033	6.1	186	28 Sa	0047	6.9	210
	0534	10.1	308		0542	11.1	338
	1243	-0.4	-12		1302	-2.9	-88
	1959	10.7	326		2037	11.9	363
14 Sa	0115	6.6	201	29 Su	0147	7.2	219
	0606	9.8	299		0630	10.5	320
	1323	-0.3	-9		1354	-2.1	-64
	2051	10.6	323		2136	11.7	357
15 Su	0203	7.1	216	30 M	0258	7.3	223
	0637	9.5	290		0729	9.6	293
	1406	-0.1	-3		1451	-1.1	-34
	2149	10.5	320		2239	11.6	354

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0424	6.8	207	16 W	0355	6.8	207
	0845	8.6	262		0756	8.1	247
	1555	0.1	3		1509	0.5	15
	2339	11.5	351		2242	11.4	347
2 W	0553	5.9	180	17 Th	0500	6.0	183
	1021	7.9	241		0916	7.6	232
	1701	1.3	40		1601	1.4	43
					2322	11.4	347
3 Th	0032	11.4	347	18 F	0559	4.8	146
	0659	4.7	143		1051	7.4	226
	1206	7.7	235		1700	2.4	73
	1806	2.4	73		2357	11.4	347
4 F	0115	11.3	344	19 Sa	0645	3.3	101
	0751	3.4	104		1220	7.8	238
	1337	8.1	247		1800	3.5	107
	1912	3.4	104				
5 Sa	0148	11.1	338	20 Su	0031	11.5	351
	0830	2.2	67		0727	1.7	52
	1449	8.8	268		1345	8.6	262
	2008	4.2	128		1902	4.6	140
6 Su	0220	10.9	332	21 M	0104	11.5	351
	0907	1.2	37		0809	0.0	0
	1547	9.5	290		1455	9.7	296
	2057	5.0	152		2001	5.5	168
7 M	0243	10.6	323	22 Tu	0139	11.6	354
	0936	0.3	9		0853	-1.6	-49
	1637	10.1	308		1601	10.8	329
	2143	5.6	171		2103	6.3	192
8 Tu	0307	10.4	317	23 W	0215	11.7	357
	1005	-0.3	-9		0936	-2.8	-85
	1719	10.6	323		1659	11.6	354
	2225	6.1	186		2157	6.9	210
9 W	0329	10.2	311	24 Th	0257	11.7	357
	1034	-0.8	-24		1021	-3.7	-113
	1757	11.0	335		1749	12.2	372
	2303	6.5	198		2251	7.2	219
10 Th	0355	10.0	305	25 F	0349	11.6	354
	1106	-1.2	-37		1107	-4.0	-122
	1833	11.2	341		1841	12.5	381
	2342	6.9	210		2347	7.4	226
11 F	0422	9.9	302	26 Sa	0429	11.3	344
	1138	-1.4	-43		1154	-3.8	-116
	1911	11.3	344		1933	12.6	384
12 Sa	0022	7.1	216	27 Su	0044	7.4	226
	0454	9.8	299		0519	10.7	326
	1215	-1.4	-43		1244	-3.1	-94
	1953	11.4	347		2022	12.5	381
13 Su	0105	7.3	223	28 M	0147	7.1	216
	0526	9.5	290		0618	9.9	302
	1253	-1.2	-37		1335	-2.0	-61
	2035	11.4	347		2114	12.3	375
14 M	0156	7.4	226	29 Tu	0256	6.5	198
	0605	9.2	280		0724	8.9	271
	1335	-0.8	-24		1424	-0.7	-21
	2121	11.4	347		2202	12.1	369
15 Tu	0256	7.3	223	30 W	0412	5.7	174
	0654	8.7	265		0843	8.0	244
	1419	-0.3	-9		1520	0.9	27
	2203	11.4	347		2247	11.9	363
				31 Th	0524	4.6	140
					1021	7.4	226
					1616	2.4	73
					2330	11.6	354

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0623	3.3	101	16 Sa	0507	3.2	98
	1206	7.4	226		1042	7.5	229
	1717	3.9	119		1614	3.6	110
					2254	11.8	360
2 Sa	0007	11.2	341	17 Su	0559	1.6	49
	0711	2.2	67		1218	8.0	244
	1337	8.0	244		1717	5.0	152
	1826	5.1	155		2329	11.7	357
3 Su	0042	10.9	332	18 M	0650	0.1	3
	0754	1.1	34		1351	8.9	271
	1454	8.8	268		1826	6.3	192
	1929	6.0	183				
4 M	0111	10.5	320	19 Tu	0011	11.7	357
	0830	0.2	6		0740	-1.4	-43
	1549	9.7	296		1507	10.0	305
	2031	6.7	204		1938	7.2	219
5 Tu	0140	10.3	314	20 W	0053	11.7	357
	0905	-0.5	-15		0829	-2.6	-79
	1638	10.4	317		1609	11.0	335
	2123	7.2	219		2044	7.7	235
6 W	0209	10.1	308	21 Th	0140	11.6	354
	0937	-1.0	-30		0918	-3.4	-104
	1717	10.9	332		1701	11.8	360
	2208	7.4	226		2147	7.9	241
7 Th	0239	10.0	305	22 F	0231	11.5	351
	1009	-1.4	-43		1006	-3.9	-119
	1755	11.3	344		1747	12.3	375
	2251	7.6	232		2244	7.8	238
8 F	0311	9.9	302	23 Sa	0323	11.3	344
	1043	-1.7	-52		1053	-3.9	-119
	1831	11.5	351		1835	12.6	384
	2328	7.6	232		2340	7.4	226
9 Sa	0347	9.8	299	24 Su	0416	10.9	332
	1117	-1.9	-58		1139	-3.4	-104
	1903	11.7	357		1918	12.7	387
10 Su	0010	7.6	232	25 M	0036	6.9	210
	0425	9.7	296		0514	10.3	314
	1152	-1.8	-55		1227	-2.5	-76
	1936	11.8	360		1958	12.6	384
11 M	0053	7.4	226	26 Tu	0131	6.2	189
	0504	9.5	290		0614	9.5	290
	1229	-1.6	-49		1310	-1.3	-40
	2008	11.9	363		2035	12.4	378
12 Tu	0138	7.0	213	27 W	0230	5.4	165
	0550	9.1	277		0722	8.7	265
	1309	-1.1	-34		1356	0.2	6
	2040	12.0	366		2113	12.1	369
13 W	0229	6.5	198	28 Th	0333	4.4	134
	0648	8.5	259		0838	7.9	241
	1348	-0.3	-9		1442	1.8	55
	2117	12.0	366		2149	11.8	360
14 Th	0322	5.6	171	29 F	0432	3.5	107
	0755	8.0	244		1007	7.5	229
	1433	0.7	21		1533	3.5	107
	2147	12.0	366		2225	11.4	347
15 F	0415	4.5	137	30 Sa	0530	2.5	76
	0914	7.6	232		1149	7.5	229
	1519	2.1	64		1628	5.0	152
	2219	11.9	363		2300	10.9	332

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SEATTLE, WASHINGTON, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0619	1.6	49	16 M	0519	0.3	9
	1326	8.1	247		1219	8.5	259
	1734	6.3	192		1648	6.4	195
	2334	10.5	320		2240	11.6	354
2 M	0708	0.8	24	17 Tu	0618	-0.8	-24
	1441	9.0	274		1356	9.4	287
	1851	7.2	219		1802	7.5	229
					2329	11.4	347
3 Tu	0011	10.2	311	18 W	0716	-1.8	-55
	0753	0.0	0		1512	10.4	317
	1541	9.8	299		1927	8.1	247
	2005	7.7	235				
4 W	0047	9.9	302	19 Th	0024	11.3	344
	0833	-0.6	-18		0812	-2.5	-76
	1626	10.5	320		1606	11.2	341
	2105	7.9	241		2041	8.1	247
5 Th	0125	9.8	299	20 F	0123	11.1	338
	0910	-1.1	-34		0905	-3.0	-91
	1707	11.0	335		1651	11.8	360
	2154	7.9	241		2144	7.7	235
6 F	0207	9.8	299	21 Sa	0222	11.0	335
	0947	-1.5	-46		0955	-3.1	-94
	1740	11.4	347		1731	12.2	372
	2234	7.8	238		2239	7.1	216
7 Sa	0249	9.8	299	22 Su	0321	10.8	329
	1023	-1.7	-52		1041	-2.9	-88
	1812	11.6	354		1809	12.4	378
	2313	7.6	232		2328	6.3	192
8 Su	0331	9.8	299	23 M	0420	10.5	320
	1056	-1.9	-58		1124	-2.2	-67
	1837	11.8	360		1842	12.4	378
	2351	7.2	219				
9 M	0414	9.7	296	24 Tu	0017	5.5	168
	1133	-1.8	-55		0519	10.0	305
	1901	12.0	366		1206	-1.2	-37
					1913	12.3	375
10 Tu	0030	6.6	201	25 W	0106	4.6	140
	0502	9.5	290		0617	9.5	290
	1208	-1.4	-43		1245	0.1	3
	1926	12.1	369		1944	12.0	366
11 W	0109	5.9	180	26 Th	0151	3.8	116
	0551	9.2	280		0718	8.9	271
	1244	-0.7	-21		1326	1.5	46
	1952	12.2	372		2016	11.7	357
12 Th	0154	4.9	149	27 F	0239	3.1	94
	0650	8.8	268		0827	8.3	253
	1322	0.4	12		1408	3.1	94
	2019	12.2	372		2045	11.2	341
13 F	0240	3.9	119	28 Sa	0332	2.5	76
	0756	8.4	256		0946	8.0	244
	1404	1.7	52		1453	4.6	140
	2051	12.1	369		2117	10.7	326
14 Sa	0329	2.7	82	29 Su	0421	1.9	58
	0914	8.1	247		1117	8.0	244
	1448	3.3	101		1549	5.9	180
	2122	12.0	366		2154	10.3	314
15 Su	0423	1.5	46	30 M	0520	1.4	43
	1042	8.1	247		1257	8.5	259
	1542	4.9	149		1658	7.0	213
	2158	11.8	360		2231	9.9	302
				31 Tu	0617	0.9	27
					1415	9.2	280
					1824	7.7	235
					2318	9.6	293

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0711	0.4	12	16 Th	0658	-1.4	-43
	1515	9.9	302		1455	10.7	326
	1951	7.9	241		1937	7.8	238
2 Th	0007	9.4	287	17 F	0019	10.4	317
	0801	-0.2	-6		0759	-1.7	-52
	1600	10.5	320		1545	11.3	344
	2051	7.9	241		2046	7.2	219
3 F	0100	9.4	287	18 Sa	0129	10.3	314
	0844	-0.7	-21		0852	-1.8	-55
	1636	10.9	332		1624	11.6	354
	2137	7.6	232		2142	6.4	195
4 Sa	0148	9.5	290	19 Su	0234	10.3	314
	0922	-1.0	-30		0943	-1.6	-49
	1707	11.2	341		1659	11.8	360
	2212	7.2	219		2227	5.4	165
5 Su	0240	9.7	296	20 M	0337	10.3	314
	0958	-1.2	-37		1025	-1.1	-34
	1729	11.5	351		1728	11.9	363
	2247	6.6	201		2309	4.5	137
6 M	0329	9.8	299	21 Tu	0432	10.2	311
	1033	-1.2	-37		1104	-0.3	-9
	1751	11.6	354		1756	11.8	360
	2319	5.8	177		2348	3.5	107
7 Tu	0415	9.8	299	22 W	0525	10.0	305
	1108	-0.9	-27		1143	0.7	21
	1809	11.8	360		1822	11.6	354
	2355	4.8	146				
8 W	0504	9.8	299	23 Th	0027	2.8	85
	1144	-0.3	-9		0619	9.8	299
	1831	11.9	363		1221	1.9	58
					1847	11.3	344
9 Th	0033	3.8	116	24 F	0105	2.1	64
	0558	9.7	296		0713	9.5	290
	1221	0.6	18		1300	3.1	94
	1857	12.0	366		1913	10.9	332
10 F	0112	2.7	82	25 Sa	0147	1.7	52
	0657	9.5	290		0810	9.2	280
	1300	1.8	55		1339	4.4	134
	1923	12.0	366		1939	10.5	320
11 Sa	0157	1.7	52	26 Su	0229	1.5	46
	0758	9.2	280		0919	8.9	271
	1342	3.3	101		1424	5.6	171
	1955	11.8	360		2010	10.0	305
12 Su	0249	0.8	24	27 M	0318	1.3	40
	0912	9.0	274		1041	8.8	268
	1427	4.8	146		1520	6.6	201
	2031	11.6	354		2048	9.5	290
13 M	0342	0.1	3	28 Tu	0417	1.3	40
	1041	8.9	271		1218	9.0	274
	1524	6.2	189		1634	7.4	226
	2112	11.3	344		2130	9.1	277
14 Tu	0445	-0.5	-15	29 W	0521	1.1	34
	1221	9.3	283		1337	9.4	287
	1639	7.4	226		1810	7.8	238
	2204	10.9	332		2229	8.9	271
15 W	0552	-1.0	-30	30 Th	0624	0.9	27
	1350	9.9	302		1436	10.0	305
	1807	8.0	244		1937	7.6	232
	2306	10.6	323		2338	8.7	265
				31 F	0719	0.5	15
					1515	10.4	317
					2033	7.2	219

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0045	8.8	268	16 Su	0151	9.5	290
	0809	0.2	6		0836	0.1	3
	1547	10.8	329		1539	11.5	351
	2108	6.5	198		2130	4.4	134
2 Su	0146	9.1	277	17 M	0257	9.8	299
	0853	0.0	0		0921	0.6	18
	1612	11.0	335		1611	11.5	351
	2140	5.7	174		2211	3.3	101
3 M	0239	9.4	287	18 Tu	0355	10.0	305
	0931	0.0	0		1007	1.3	40
	1630	11.2	341		1636	11.4	347
	2212	4.8	146		2244	2.3	70
4 Tu	0331	9.8	299	19 W	0446	10.2	311
	1004	0.2	6		1045	2.1	64
	1648	11.4	347		1659	11.2	341
	2244	3.6	110		2319	1.5	46
5 W	0419	10.1	308	20 Th	0534	10.3	314
	1042	0.8	24		1121	3.0	91
	1709	11.5	351		1723	10.9	332
	2319	2.4	73		2351	0.9	27
6 Th	0509	10.4	317	21 F	0620	10.4	317
	1118	1.6	49		1159	4.0	122
	1731	11.7	357		1745	10.6	323
	2356	1.2	37				
7 F	0605	10.5	320	22 Sa	0023	0.6	18
	1159	2.6	79		0709	10.3	314
	1759	11.7	357		1238	4.9	149
					1809	10.2	311
8 Sa	0036	0.2	6	23 Su	0058	0.4	12
	0659	10.5	320		0758	10.1	308
	1241	3.8	116		1320	5.7	174
	1830	11.6	354		1838	9.8	299
9 Su	0121	-0.5	-15	24 M	0140	0.4	12
	0803	10.3	314		0857	9.9	302
	1327	5.1	155		1406	6.5	198
	1905	11.4	347		1907	9.4	287
10 M	0210	-0.9	-27	25 Tu	0227	0.7	21
	0915	10.0	305		1006	9.8	299
	1419	6.3	192		1504	7.2	219
	1947	11.0	335		1945	9.0	274
11 Tu	0309	-0.9	-27	26 W	0320	0.9	27
	1039	10.0	305		1122	9.8	299
	1525	7.2	219		1623	7.6	232
	2036	10.5	320		2037	8.6	262
12 W	0415	-0.8	-24	27 Th	0421	1.2	37
	1209	10.1	308		1234	10.0	305
	1652	7.7	235		1806	7.5	229
	2142	9.9	302		2147	8.2	250
13 Th	0526	-0.6	-18	28 F	0527	1.3	40
	1325	10.6	323		1330	10.3	314
	1833	7.4	226		1918	6.9	210
	2304	9.5	290		2313	8.0	244
14 F	0638	-0.4	-12	29 Sa	0629	1.3	40
	1422	11.0	335		1409	10.6	323
	1949	6.6	201		2000	6.1	186
15 Sa	0031	9.3	283	30 Su	0035	8.2	250
	0740	-0.3	-9		0721	1.4	43
	1503	11.3	344		1438	10.8	329
	2046	5.5	168		2036	5.1	155

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0140	8.7	265	16 Tu	0319	9.6	293
	0810	1.5	46		0902	3.1	94
	1459	11.0	335		1515	11.2	341
	2104	3.9	119		2143	1.3	40
2 Tu	0240	9.3	283	17 W	0417	10.2	311
	0852	1.9	58		0945	3.9	119
	1521	11.1	338		1539	11.0	335
	2135	2.5	76		2215	0.5	15
3 W	0351	10.0	305	18 Th	0501	10.6	323
	0935	2.4	73		1023	4.6	140
	1543	11.3	344		1602	10.7	326
	2211	1.1	34		2247	-0.1	-3
4 Th	0425	10.7	326	19 F	0543	10.9	332
	1016	3.1	94		1105	5.3	162
	1607	11.5	351		1623	10.5	320
	2243	-0.2	-6		2315	-0.4	-12
5 F	0516	11.2	341	20 Sa	0621	11.1	338
	1058	3.9	119		1140	5.9	180
	1635	11.6	354		1648	10.2	311
	2322	-1.3	-40		2347	-0.6	-18
6 Sa	0609	11.5	351	21 Su	0703	11.1	338
	1140	4.9	149		1223	6.4	195
	1707	11.6	354		1714	9.9	302
7 Su	0007	-2.0	-61	22 M	0022	-0.6	-18
	0707	11.5	351		0749	11.1	338
	1229	5.3	177		1305	6.9	210
	1744	11.4	347		1745	9.6	293
8 M	0053	-2.2	-67	23 Tu	0103	-0.4	-12
	0806	11.4	347		0839	10.9	332
	1321	6.6	201		1355	7.3	223
	1826	11.1	338		1817	9.2	280
9 Tu	0144	-2.0	-61	24 W	0146	0.0	0
	0915	11.2	341		0936	10.8	329
	1421	7.2	219		1455	7.5	229
	1912	10.5	320		1859	8.8	268
10 W	0243	-1.4	-43	25 Th	0235	0.5	15
	1031	11.1	338		1036	10.8	329
	1538	7.5	229		1611	7.4	226
	2015	9.7	296		1955	8.2	250
11 Th	0347	-0.6	-18	26 F	0329	1.1	34
	1143	11.1	338		1124	10.8	329
	1712	7.2	219		1733	6.9	210
	2136	8.9	271		2117	7.7	235
12 F	0500	0.3	9	27 Sa	0427	1.7	52
	1244	11.2	341		1210	10.9	332
	1848	6.2	189		1836	6.0	183
	2319	8.5	259		2251	7.5	229
13 Sa	0612	1.0	30	28 Su	0528	2.3	70
	1333	11.4	347		1247	11.0	335
	1947	4.9	149		1917	4.9	149
14 Su	0056	8.6	262	29 M	0021	7.8	238
	0715	1.7	52		0629	2.9	88
	1415	11.4	347		1316	11.2	341
	2036	3.6	110		1953	3.5	107
15 M	0216	9.1	277	30 Tu	0137	8.5	259
	0811	2.4	73		0724	3.5	107
	1447	11.4	347		1315	11.3	344
	2111	2.4	73		2025	2.0	61
				31 W	0241	9.5	290
					0815	4.2	128
					1412	11.4	347
					2100	0.4	12

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0339	10.4	317	16 F	0506	11.2	341
	0905	4.9	149		1012	6.7	204
	1441	11.6	354		1509	10.5	320
	2139	-1.1	-34		2219	-0.9	-27
2 F	0432	11.3	344	17 Sa	0548	11.5	351
	0954	5.6	171		1051	7.1	216
	1512	11.7	357		1534	10.3	314
	2218	-2.3	-70		2249	-1.2	-37
3 Sa	0524	12.0	366	18 Su	0623	11.7	357
	1040	6.2	189		1132	7.4	226
	1547	11.8	360		1603	10.1	308
	2300	-3.1	-94		2323	-1.3	-40
4 Su	0613	12.4	378	19 M	0702	11.9	363
	1129	6.8	207		1212	7.5	229
	1626	11.7	357		1635	9.9	302
	2344	-3.4	-104		2357	-1.2	-37
5 M	0712	12.5	381	20 Tu	0739	11.9	363
	1220	7.3	223		1255	7.6	232
	1709	11.4	347		1707	9.7	296
6 Tu	0033	-3.1	-94	21 W	0036	-0.9	-27
	0806	12.4	378		0819	11.9	363
	1318	7.5	229		1343	7.6	232
	1757	10.8	329		1748	9.3	283
7 W	0123	-2.4	-73	22 Th	0115	-0.5	-15
	0906	12.2	372		0901	11.8	360
	1424	7.5	229		1439	7.4	226
	1856	10.0	305		1830	8.8	268
8 Th	0219	-1.3	-40	23 F	0158	0.2	6
	1005	12.1	369		0940	11.8	360
	1547	7.0	213		1542	7.0	213
	2012	9.0	274		1936	8.1	247
9 F	0318	0.0	0	24 Sa	0243	1.0	30
	1101	11.9	363		1021	11.8	360
	1713	6.1	186		1643	6.1	186
	2145	8.2	250		2059	7.6	232
10 Sa	0424	1.4	43	25 Su	0333	2.1	64
	1154	11.8	360		1054	11.7	357
	1826	4.8	146		1739	5.0	152
	2334	7.9	241		2232	7.4	226
11 Su	0533	2.7	82	26 M	0430	3.2	98
	1237	11.7	357		1130	11.7	357
	1924	3.3	101		1825	3.6	110
12 M	0113	8.3	253	27 Tu	0007	7.8	238
	0642	3.9	119		0530	4.4	134
	1316	11.5	351		1202	11.7	357
	2007	2.0	61		1907	2.0	61
13 Tu	0233	9.1	277	28 W	0133	8.7	265
	0741	4.8	146		0635	5.5	168
	1348	11.3	344		1234	11.7	357
	2044	0.9	27		1949	0.4	12
14 W	0334	9.9	302	29 Th	0241	9.8	299
	0837	5.6	171		0737	6.4	195
	1419	11.0	335		1312	11.8	360
	2116	0.1	3		2028	-1.1	-34
15 Th	0423	10.6	323	30 F	0344	10.9	332
	0929	6.2	189		0836	7.1	216
	1444	10.7	326		1348	11.9	363
	2148	-0.5	-15		2112	-2.4	-73

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0437	11.9	363	16 Su	0542	12.0	366
	0933	7.6	232		1045	8.1	247
	1430	12.0	366		1459	10.2	311
	2155	-3.4	-104		2230	-1.3	-40
2 Su	0528	12.6	384	17 M	0618	12.2	372
	1027	7.9	241		1122	8.0	244
	1515	12.0	366		1537	10.1	308
	2241	-3.8	-116		2304	-1.4	-43
3 M	0618	13.0	396	18 Tu	0650	12.3	375
	1119	7.9	241		1201	7.9	241
	1601	11.8	360		1612	10.0	305
	2328	-3.8	-116		2339	-1.3	-40
4 Tu	0706	13.1	399	19 W	0718	12.4	378
	1216	7.8	238		1239	7.6	232
	1653	11.4	347		1654	9.8	299
5 W	0016	-3.2	-98	20 Th	0012	-1.1	-34
	0752	13.1	399		0747	12.5	381
	1313	7.4	226		1322	7.2	219
	1748	10.6	323		1736	9.4	287
6 Th	0105	-2.2	-67	21 F	0049	-0.5	-15
	0841	13.0	396		0819	12.5	381
	1419	6.8	207		1409	6.7	204
	1854	9.7	296		1832	8.9	271
7 F	0157	-0.7	-21	22 Sa	0125	0.3	9
	0927	12.7	387		0847	12.5	381
	1528	6.0	183		1458	5.9	180
	2011	8.7	265		1934	8.4	256
8 Sa	0246	0.9	27	23 Su	0207	1.4	43
	1010	12.5	381		0916	12.4	378
	1641	4.8	146		1548	4.9	149
	2146	7.9	241		2050	7.9	241
9 Su	0345	2.7	82	24 M	0249	2.8	85
	1053	12.2	372		0948	12.3	375
	1750	3.6	110		1640	3.7	113
	2335	7.8	238		2215	7.8	238
10 M	0448	4.4	134	25 Tu	0341	4.3	131
	1135	11.8	360		1023	12.1	369
	1844	2.3	70		1732	2.3	70
					2351	8.1	247
11 Tu	0118	8.4	256	26 W	0441	5.8	177
	0556	5.8	177		1059	12.0	366
	1212	11.4	347		1825	0.9	27
	1930	1.3	40				
12 W	0237	9.3	283	27 Th	0128	9.0	274
	0709	6.8	207		0549	7.1	216
	1247	11.0	335		1139	11.9	363
	2013	0.4	12		1915	-0.6	-18
13 Th	0339	10.3	314	28 F	0247	10.2	311
	0816	7.4	226		0706	8.0	244
	1324	10.7	326		1220	11.9	363
	2048	-0.3	-9		2005	-1.8	-55
14 F	0425	11.0	335	29 Sa	0349	11.3	344
	0913	7.8	238		0819	8.5	259
	1354	10.4	317		1309	11.9	363
	2123	-0.8	-24		2054	-2.8	-85
15 Sa	0507	11.6	354	30 Su	0441	12.2	372
	1003	8.0	244		0923	8.6	262
	1428	10.3	314		1404	12.0	366
	2156	-1.1	-34		2141	-3.4	-104
				31 M	0527	12.8	390
					1020	8.3	253
					1457	11.9	363
					2229	-3.6	-110

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

VICTORIA, BRITISH COLUMBIA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0830	8.8	268	16 Tu	0715	8.8	268
	1220	7.8	238		1355	6.2	189
	1440	8.0	244		1740	6.4	195
					2355	4.8	146
2 Tu	0000	2.7	82	17 W	0735	8.9	271
	0750	8.9	271		1525	5.3	162
	1335	6.9	210		1930	5.8	177
	1535	7.0	213		2330	5.7	174
3 W	0035	3.7	113	18 Th	0750	9.0	274
	0800	9.1	277		1615	4.5	137
	1450	5.8	177				
	1905	6.1	186				
4 Th	0100	4.9	149	19 F	0800	9.0	274
	0825	9.3	283		1700	3.8	116
	1600	4.5	137				
5 F	0845	9.6	293	20 Sa	0805	9.1	277
	1655	3.3	101		1740	3.2	98
6 Sa	0910	9.9	302	21 Su	0810	9.3	283
	1745	2.1	64		1815	2.6	79
7 Su	0935	10.2	311	22 M	0835	9.4	287
	1830	1.2	37		1855	2.2	67
8 M	1005	10.3	314	23 Tu	0910	9.5	290
	1915	0.6	18		1930	1.8	55
9 Tu	1045	10.4	317	24 W	1005	9.6	293
	2000	0.3	9		2005	1.5	46
10 W	1135	10.2	311	25 Th	1100	9.6	293
	2040	0.3	9		2040	1.3	40
11 Th	0650	9.0	274	26 F	0700	8.6	262
	0815	8.9	271		0745	8.6	262
	1240	10.0	305		1205	9.5	290
	2125	0.5	15		2115	1.3	40
12 F	0710	8.9	271	27 Sa	0650	8.4	256
	0920	8.5	259		0900	8.2	250
	1340	9.5	290		1310	9.2	280
	2205	1.1	34		2150	1.5	46
13 Sa	0730	8.7	265	28 Su	0640	8.3	253
	1020	8.1	247		0955	7.6	232
	1435	8.9	271		1420	8.8	268
	2245	1.8	55		2225	2.0	61
14 Su	0735	8.6	262	29 M	0545	8.5	259
	1125	7.6	232		1055	6.9	210
	1525	8.1	247		1530	8.1	247
	2320	2.7	82		2255	2.8	85
15 M	0705	8.7	265	30 Tu	0600	8.7	265
	1230	6.9	210		1150	6.0	183
	1630	7.2	219		1645	7.3	223
	2350	3.7	113		2330	3.9	119
				31 W	0620	9.0	274
					1250	5.1	155
					1805	6.6	201

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0000	5.0	152	16 F	0620	8.7	265
	0645	9.3	283		1435	3.9	119
	1355	4.2	128				
	2005	6.0	183				
2 F	0010	6.1	186	17 Sa	0630	8.8	268
	0715	9.5	290		1545	3.5	107
	1505	3.3	101				
3 Sa	0740	9.7	296	18 Su	0635	8.8	268
	1615	2.5	76		1645	3.2	98
4 Su	0805	9.8	299	19 M	0650	8.9	271
	1720	1.8	55		1735	2.8	85
5 M	0840	9.8	299	20 Tu	0735	8.9	271
	1810	1.4	43		1820	2.4	73
6 Tu	0930	9.7	296	21 W	0840	8.9	271
	1900	1.2	37		1900	2.1	64
7 W	0510	8.7	265	22 Th	0955	8.9	271
	0615	8.6	262		1935	1.9	58
	1050	9.5	290				
	1945	1.2	37				
8 Th	0530	8.5	259	23 F	0515	8.0	244
	0720	8.3	253		0705	7.9	241
	1215	9.3	283		1130	8.8	268
	2025	1.4	43		2010	1.9	58
9 F	0550	8.3	253	24 Sa	0450	7.8	238
	0820	7.8	238		0800	7.3	223
	1320	9.0	274		1300	8.7	265
	2105	1.8	55		2045	2.2	67
10 Sa	0600	8.1	247	25 Su	0350	7.9	241
	0910	7.2	219		0850	6.5	198
	1415	8.6	262		1405	8.4	256
	2140	2.4	73		2115	2.7	82
11 Su	0455	8.1	247	26 M	0400	8.2	250
	1000	6.6	201		0940	5.5	168
	1505	8.1	247		1510	8.0	244
	2215	3.2	98		2150	3.5	107
12 M	0505	8.3	253	27 Tu	0420	8.5	259
	1050	6.0	183		1030	4.6	140
	1600	7.4	226		1610	7.5	229
	2245	4.1	125		2225	4.4	134
13 Tu	0525	8.5	259	28 W	0445	8.9	271
	1145	5.4	165		1125	3.7	113
	1700	6.9	210		1725	7.0	213
	2305	5.0	152		2300	5.5	168
14 W	0550	8.6	262				
	1235	4.8	146				
	1810	6.4	195				
	2315	5.8	177				
15 Th	0605	8.7	265				
	1330	4.3	131				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0515	9.1	277	16 F	0440	8.4	256
	1220	3.0	91		1225	3.1	94
	1910	6.6	201				
	2325	6.5	198				
2 F	0540	9.3	283	17 Sa	0435	8.4	256
	1315	2.5	76		1315	3.0	91
3 Sa	0605	9.3	283	18 Su	0345	8.5	259
	1425	2.2	67		1415	3.0	91
4 Su	0630	9.3	283	19 M	0350	8.5	259
	1540	2.0	61		1525	3.0	91
5 M	0700	9.1	277	20 Tu	0410	8.5	259
	1650	1.9	58		1635	2.8	85
6 Tu	0325	8.4	256	21 W	0420	8.3	253
	0410	8.4	256		1730	2.7	82
	0750	8.8	268				
	1745	2.0	61				
7 W	0330	8.3	253	22 Th	0330	8.0	244
	0545	8.0	244		0600	7.8	238
	0945	8.4	256		0815	7.9	241
	1835	2.1	64		1810	2.7	82
8 Th	0350	8.1	247	23 F	0255	7.7	235
	0645	7.5	229		0630	7.2	219
	1135	8.2	250		1025	7.7	235
	1920	2.4	73		1850	2.8	85
9 F	0405	7.8	238	24 Sa	0210	7.6	232
	0730	6.8	207		0710	6.3	192
	1245	8.0	244		1215	7.6	232
	2000	2.8	85		1925	3.1	94
10 Sa	0305	7.7	235	25 Su	0210	7.8	238
	0815	6.1	186		0755	5.3	162
	1340	7.8	238		1325	7.6	232
	2035	3.4	104		2005	3.7	113
11 Su	0310	7.8	238	26 M	0225	8.1	247
	0900	5.4	165		0840	4.1	125
	1435	7.5	229		1430	7.5	229
	2110	4.1	125		2040	4.4	134
12 M	0330	8.0	244	27 Tu	0250	8.5	259
	0940	4.7	143		0925	3.0	91
	1530	7.2	219		1535	7.4	226
	2140	4.9	149		2115	5.3	162
13 Tu	0350	8.2	250	28 W	0315	8.9	271
	1020	4.1	125		1010	2.1	64
	1625	6.9	210		1650	7.2	219
	2205	5.6	171		2150	6.2	189
14 W	0410	8.3	253	29 Th	0340	9.1	277
	1105	3.6	110		1100	1.4	43
	1740	6.7	204		2025	7.3	223
	2225	6.3	192		2225	7.0	213
15 Th	0430	8.4	256	30 F	0405	9.3	283
	1145	3.3	101		1150	1.1	34
	2130	6.9	210		2200	7.7	235
	2225	6.9	210		2300	7.7	235
				31 Sa	0425	9.2	280
					1245	1.2	37

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 2.5 feet (0.8 meter) to refer these levels to the datum of N.O.S. charts.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0435	9.0	274	16 M	0215	8.4	256
	1350	1.5	46		1320	2.3	70
2 M	0450	8.6	262	17 Tu	0230	8.3	253
	1500	1.9	58		1415	2.5	76
3 Tu	0110	8.3	253	18 W	0115	8.1	247
	0420	8.1	247		1520	2.8	85
	0520	8.1	247				
	1610	2.3	70				
4 W	0135	8.2	250	19 Th	0055	7.9	241
	0540	7.4	226		1620	3.0	91
	0650	7.4	226				
	1710	2.7	82				
5 Th	0155	8.0	244	20 F	0045	7.8	238
	0620	6.7	204		0605	6.6	201
	1040	7.0	213		0825	6.7	204
	1800	3.2	98		1710	3.4	104
6 F	0145	7.8	238	21 Sa	0030	7.8	238
	0655	5.9	180		0625	5.6	171
	1200	6.8	207		1110	6.5	198
	1845	3.8	116		1755	3.9	119
7 Sa	0125	7.7	235	22 Su	0035	7.9	241
	0730	5.1	155		0700	4.4	134
	1310	6.8	207		1240	6.6	201
	1920	4.5	137		1835	4.6	140
8 Su	0140	7.8	238	23 M	0050	8.2	250
	0805	4.3	131		0740	3.1	94
	1415	6.7	204		1355	6.8	207
	1955	5.2	158		1915	5.4	165
9 M	0200	7.9	241	24 Tu	0115	8.6	262
	0840	3.5	107		0820	1.8	55
	1520	6.8	207		1510	7.0	213
	2030	5.8	177		1955	6.2	189
10 Tu	0220	8.1	247	25 W	0140	9.0	274
	0920	2.9	88		0905	0.8	24
	1805	6.9	210		1615	7.4	226
	2100	6.5	198		2035	7.0	213
11 W	0235	8.2	250	26 Th	0205	9.3	283
	0955	2.4	73		0950	0.1	3
	1920	7.2	219		1935	7.8	238
	2120	7.0	213		2120	7.6	232
12 Th	0245	8.3	253	27 F	0230	9.5	290
	1030	2.1	64		1040	-0.1	-3
	2035	7.5	229		2045	8.1	247
	2135	7.5	229		2205	8.1	247
13 F	0240	8.3	253	28 Sa	0245	9.4	287
	1110	1.9	58		1130	0.0	0
					2145	8.4	256
					2305	8.3	253
14 Sa	0200	8.4	256	29 Su	0300	9.1	277
	1145	2.0	61		1220	0.5	15
					2235	8.4	256
15 Su	0200	8.4	256	30 M	0030	8.3	253
	1230	2.1	64		0315	8.5	259
					1320	1.2	37
					2315	8.4	256

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	1420	2.0	61	16 W	1330	2.3	70
	2345	8.3	253		2310	8.1	247
2 W	1520	2.9	88	17 Th	1415	2.9	88
	2355	8.1	247		2310	8.0	244
3 Th	0700	6.1	186	18 F	1505	3.6	110
	0905	6.1	186		2255	8.0	244
	1620	3.7	113				
	2350	8.0	244				
4 F	0630	5.2	158	19 Sa	0535	5.3	162
	1105	5.9	180		0945	5.7	174
	1710	4.5	137		1555	4.4	134
	2355	8.0	244		2300	8.1	247
5 Sa	0650	4.3	131	20 Su	0600	4.0	122
	1425	6.0	183		1145	5.9	180
	1755	5.3	162		1645	5.3	162
					2320	8.5	259
6 Su	0015	8.0	244	21 M	0640	2.7	82
	0720	3.5	107		1515	6.3	192
	1600	6.5	198		1735	6.1	186
	1835	6.0	183		2340	8.9	271
7 M	0030	8.1	247	22 Tu	0720	1.4	43
	0750	2.8	85		1645	7.0	213
	1705	6.9	210		1820	6.9	210
	1910	6.7	204				
8 Tu	0045	8.2	250	23 W	0005	9.3	283
	0820	2.1	64		0805	0.3	9
	1805	7.3	223		1755	7.7	235
	1940	7.2	219		1910	7.6	232
9 W	0055	8.3	253	24 Th	0030	9.6	293
	0855	1.6	49		0850	-0.4	-12
	1910	7.7	235		1855	8.1	247
	2000	7.7	235		2000	8.1	247
10 Th	0035	8.4	256	25 F	0055	9.7	296
	0930	1.3	40		0935	-0.8	-24
					1945	8.4	256
					2055	8.3	253
11 F	0025	8.5	259	26 Sa	0125	9.7	296
	1005	1.2	37		1020	-0.7	-21
					2030	8.5	259
					2200	8.4	256
12 Sa	0040	8.6	262	27 Su	0200	9.3	283
	1040	1.2	37		1110	-0.2	-6
					2110	8.5	259
					2315	8.2	250
13 Su	0100	8.6	262	28 M	0230	8.7	265
	1120	1.3	40		1155	0.6	18
					2140	8.4	256
14 M	0120	8.5	259	29 Tu	0050	7.8	238
	1200	1.5	46		0255	7.9	241
	2240	8.2	250		1245	1.5	46
					2205	8.3	253
15 Tu	0000	8.2	250	30 W	1335	2.5	76
	0140	8.3	253		2215	8.2	250
	1245	1.9	58				
	2255	8.2	250				
				31 Th	0555	6.0	183
					0700	6.0	183
					1425	3.6	110
					2215	8.2	250

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0550	5.0	152	16 Sa	0420	5.3	162
	0930	5.4	165		0805	5.5	168
	1510	4.7	143		1400	4.4	134
	2225	8.2	250		2125	8.3	253
2 Sa	0605	4.1	125	17 Su	0450	4.0	122
	1420	5.7	174		1050	5.4	165
	1550	5.7	174		1425	5.4	165
	2245	8.2	250		2145	8.6	262
3 Su	0625	3.3	101	18 M	0535	2.7	82
	2300	8.3	253		2205	9.0	274
4 M	0655	2.5	76	19 Tu	0615	1.5	46
	2310	8.3	253		2230	9.4	287
5 Tu	0725	1.9	58	20 W	0700	0.5	15
	2250	8.5	259		2300	9.7	296
6 W	0800	1.5	46	21 Th	0745	-0.3	-9
	2250	8.6	262		2335	9.9	302
7 Th	0835	1.1	34	22 F	0835	-0.6	-18
	2315	8.8	268		1900	8.3	253
					1935	8.3	253
8 F	0910	0.9	27	23 Sa	0025	9.8	299
	2345	8.8	268		0920	-0.6	-18
					1925	8.3	253
					2050	8.2	250
9 Sa	0945	0.8	24	24 Su	0120	9.5	290
					1005	-0.3	-9
					1955	8.3	253
					2200	8.0	244
10 Su	0020	8.7	265	25 M	0220	8.9	271
	1020	0.9	27		1050	0.3	9
	2105	8.2	250		2015	8.2	250
	2135	8.2	250		2310	7.6	232
11 M	0050	8.6	262	26 Tu	0320	8.2	250
	1100	1.0	30		1130	1.2	37
	2110	8.2	250		2030	8.1	247
	2300	8.1	247				
12 Tu	0125	8.3	253	27 W	0030	7.0	213
	1135	1.4	43		0425	7.3	223
	2125	8.2	250		1210	2.3	70
					2020	8.2	250
13 W	0015	7.8	238	28 Th	0205	6.2	189
	0200	7.9	241		0545	6.3	192
	1215	1.9	58		1250	3.4	104
	2135	8.1	247		2025	8.2	250
14 Th	0145	7.2	219	29 F	0355	5.2	158
	0230	7.2	219		0720	5.5	168
	1250	2.6	79		1315	4.5	137
	2125	8.0	244		2045	8.3	253
15 F	1325	3.4	104	30 Sa	0440	4.3	131
	2110	8.1	247		2105	8.3	253

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 2.5 feet (0.8 meter) to refer these levels to the datum of N.O.S. charts.

VICTORIA, BRITISH COLUMBIA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Su	0520	3.5	107	16 M	0410	3.0	91
	2120	8.4	256		2035	9.0	274
2 M	0550	2.8	85	17 Tu	0505	1.9	58
	2120	8.4	256		2100	9.3	283
3 Tu	0625	2.2	67	18 W	0555	1.1	34
	2115	8.6	262		2135	9.6	293
4 W	0705	1.8	55	19 Th	0645	0.4	12
	2135	8.7	265		2225	9.7	296
5 Th	0740	1.4	43	20 F	0735	0.0	0
	2210	8.8	268		2330	9.6	293
6 F	0815	1.1	34	21 Sa	0820	0.0	0
	2255	8.9	271		1815	8.1	247
					1945	8.0	244
7 Sa	0850	1.0	30	22 Su	0045	9.4	287
	2345	8.8	268		0900	0.2	6
					1835	7.9	241
					2050	7.6	232
8 Su	0925	0.9	27	23 M	0150	9.0	274
	1950	8.0	244		0945	0.7	21
	2035	8.0	244		1850	7.8	238
					2150	7.0	213
9 M	0035	8.7	265	24 Tu	0250	8.4	256
	1000	1.0	30		1025	1.5	46
	1945	8.0	244		1805	7.8	238
	2150	7.8	238		2250	6.5	198
10 Tu	0120	8.4	256	25 W	0345	7.6	232
	1035	1.3	40		1100	2.4	73
	1950	7.9	241		1810	8.0	244
	2250	7.4	226		2355	5.8	177
11 W	0205	7.9	241	26 Th	0445	6.8	207
	1110	1.8	55		1135	3.5	107
	1938	7.9	241		1835	8.1	247
	2350	6.8	207				
12 Th	0300	7.3	223	27 F	0100	5.2	158
	1140	2.5	76		0555	6.1	186
	1910	8.0	244		1200	4.5	137
					1900	8.3	253
13 F	0050	6.0	183	28 Sa	0210	4.5	137
	0505	6.5	198		0755	5.6	171
	1215	3.4	104		1205	5.5	168
	1925	8.2	250		1920	8.3	253
14 Sa	0155	5.1	155	29 Su	0325	3.8	116
	0545	5.8	177		1935	8.3	253
	1245	4.5	137				
	1945	8.4	256				
15 Su	0305	4.1	125	30 M	0420	3.3	101
	0900	5.4	165		1945	8.4	256
	1250	5.5	168				
	2010	8.7	265				
				31 Tu	0510	2.8	85
					1950	8.5	259

AUGUST

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 W	0555	2.4	73	16 Th	0540	1.2	37
	2020	8.6	262		2110	9.1	277
2 Th	0635	2.0	61	17 F	0630	1.0	30
	2100	8.6	262		1635	8.0	244
					1750	7.9	241
					2240	9.0	274
3 F	0715	1.7	52	18 Sa	0715	1.0	30
	2200	8.7	265		1650	7.8	238
					1855	7.5	229
4 Sa	0750	1.5	46	19 Su	0005	8.8	268
	2305	8.7	265		0800	1.2	37
					1705	7.6	232
					1955	6.9	210
5 Su	0825	1.4	43	20 M	0110	8.6	262
	1820	7.7	235		0840	1.6	49
	1945	7.6	232		1605	7.5	229
					2045	6.3	192
6 M	0015	8.6	262	21 Tu	0205	8.2	250
	0900	1.4	43		0915	2.3	70
	1810	7.6	232		1605	7.7	235
	2045	7.2	219		2135	5.7	174
7 Tu	0125	8.4	256	22 W	0300	7.7	235
	0930	1.7	52		0955	3.1	94
	1715	7.5	229		1625	7.9	241
	2135	6.7	204		2225	5.0	152
8 W	0230	8.0	244	23 Th	0400	7.1	216
	1005	2.2	67		1025	4.0	122
	1705	7.7	235		1655	8.0	244
	2230	6.0	183		2315	4.4	134
9 Th	0330	7.5	229	24 F	0500	6.6	201
	1035	2.9	88		1055	4.9	149
	1725	8.0	244		1720	8.2	250
	2320	5.2	158				
10 F	0435	6.9	210	25 Sa	0005	4.0	122
	1110	3.8	116		0620	6.2	189
	1750	8.3	253		1110	5.8	177
					1740	8.2	250
11 Sa	0015	4.4	134	26 Su	0100	3.6	110
	0550	6.3	192		1755	8.2	250
	1140	4.8	146				
	1815	8.5	259				
12 Su	0115	3.6	110	27 M	0200	3.4	104
	0725	5.9	180		1805	8.2	250
	1200	5.8	177				
	1840	8.7	265				
13 M	0220	2.9	88	28 Tu	0310	3.2	98
	1905	9.0	274		1810	8.2	250
14 Tu	0330	2.2	67	29 W	0420	2.9	88
	1930	9.1	277		1830	8.3	253
15 W	0440	1.7	52	30 Th	0515	2.7	82
	2010	9.2	280		1925	8.2	250
				31 F	0600	2.5	76
					2035	8.2	250

SEPTEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Sa	0645	2.3	70	16 Su	0650	2.4	73
	1655	7.7	235		1500	7.5	229
	1815	7.7	235		1905	6.3	192
	2200	8.1	247				
2 Su	0720	2.2	67	17 M	0030	7.8	238
	1630	7.4	226		0730	2.9	88
	1900	7.2	219		1415	7.6	232
	2345	8.1	247		1955	5.5	168
3 M	0750	2.3	70	18 Tu	0130	7.6	232
	1525	7.3	223		0810	3.5	107
	1945	6.5	198		1435	7.7	235
					2035	4.7	143
4 Tu	0055	8.0	244	19 W	0225	7.4	226
	0825	2.5	76		0845	4.3	131
	1515	7.5	229		1455	7.9	241
	2035	5.8	177		2120	4.0	122
5 W	0155	7.9	241	20 Th	0320	7.1	216
	0855	3.0	91		0920	5.1	155
	1530	7.7	235		1520	8.1	247
	2120	4.9	149		2200	3.5	107
6 Th	0255	7.6	232	21 F	0425	7.0	213
	0930	3.7	113		0950	5.8	177
	1550	8.1	247		1545	8.2	250
	2205	4.0	122		2240	3.0	91
7 F	0355	7.3	223	22 Sa	0725	6.8	207
	1000	4.6	140		1015	6.5	198
	1615	8.4	256		1600	8.2	250
	2255	3.2	98		2325	2.8	85
8 Sa	0505	6.9	210	23 Su	0915	7.1	216
	1035	5.5	168		1025	7.1	216
	1640	8.7	265		1610	8.2	250
	2345	2.6	79				
9 Su	0635	6.6	201	24 M	0005	2.7	82
	1105	6.4	195		1555	8.2	250
	1705	8.8	268				
10 M	0040	2.1	64	25 Tu	0055	2.8	85
	1730	8.9	271		1500	8.2	250
11 Tu	0140	2.0	61	26 W	0150	2.9	88
	1755	8.9	271		1500	8.3	253
12 W	0255	1.9	58	27 Th	0305	3.1	94
	1830	8.7	265		1510	8.2	250
13 Th	0410	1.9	58	28 F	0415	3.1	94
	1440	8.1	247		1505	8.0	244
	1535	8.0	244				
	1935	8.4	256				
14 F	0510	1.9	58	29 Sa	0510	3.1	94
	1445	7.9	241		1430	7.7	235
	1720	7.6	232		1820	7.4	226
	2135	8.1	247		2010	7.4	226
15 Sa	0605	2.1	64	30 Su	0550	3.2	98
	1505	7.7	235		1355	7.6	232
	1820	7.0	213		1830	6.7	204
	2320	7.9	241		2240	7.3	223

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 2.5 feet (0.8 meter) to refer these levels to the datum of N.O.S. charts.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0630	3.4	104	16 Tu	0105	6.8	207
	1330	7.6	232		0655	4.9	149
	1900	5.9	180		1305	8.1	247
					1945	3.9	119
2 Tu	0010	7.3	223	17 W	0220	6.9	210
	0705	3.7	113		0735	5.6	171
	1335	7.7	235		1330	8.2	250
	1935	4.9	149		2020	3.2	98
3 W	0115	7.4	226	18 Th	0450	7.1	216
	0740	4.3	131		0810	6.3	192
	1355	8.0	244		1350	8.3	253
	2015	3.8	116		2100	2.6	79
4 Th	0220	7.4	226	19 F	0605	7.4	226
	0815	4.9	149		0845	7.0	213
	1415	8.4	256		1405	8.4	256
	2100	2.8	85		2135	2.2	67
5 F	0320	7.4	226	20 Sa	0710	7.7	235
	0850	5.7	174		0915	7.5	229
	1440	8.7	265		1415	8.5	259
	2145	1.9	58		2210	1.9	58
6 Sa	0430	7.4	226	21 Su	0820	7.9	241
	0925	6.5	198		0935	7.9	241
	1505	9.0	274		1345	8.5	259
	2230	1.3	40		2250	1.9	58
7 Su	0755	7.5	229	22 M	1335	8.6	262
	1005	7.2	219		2330	2.0	61
	1530	9.2	280				
	2320	1.0	30				
8 M	0925	7.8	238	23 Tu	1335	8.6	262
	1040	7.8	238				
	1545	9.2	280				
9 Tu	0015	1.1	34	24 W	0010	2.3	70
	1045	8.1	247		1335	8.5	259
	1125	8.1	247				
	1550	9.0	274				
10 W	0110	1.4	43	25 Th	0055	2.6	79
	1145	8.3	253		1315	8.4	256
	1245	8.3	253				
	1615	8.6	262				
11 Th	0220	1.9	58	26 F	0145	3.0	91
	1220	8.3	253		1200	8.3	253
	1525	8.1	247				
	1650	8.1	247				
12 F	0330	2.4	73	27 Sa	0245	3.3	101
	1250	8.2	250		1205	8.2	250
	1715	7.3	223				
	1905	7.4	226				
13 Sa	0435	3.0	91	28 Su	0345	3.7	113
	1305	8.1	247		1205	8.1	247
	1755	6.5	198		1835	6.5	198
	2220	7.0	213		2035	6.5	198
14 Su	0530	3.6	110	29 M	0435	4.2	128
	1245	8.0	244		1200	8.1	247
	1830	5.6	171		1820	5.6	171
	2345	6.8	207		2310	6.4	195
15 M	0615	4.2	128	30 Tu	0525	4.8	146
	1250	8.0	244		1205	8.2	250
	1910	4.7	143		1845	4.4	134
				31 W	0035	6.7	204
					0605	5.4	165
					1220	8.5	259
					1920	3.2	98

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0155	7.0	213	16 F	0600	8.1	247
	0650	6.2	189		0725	8.0	244
	1240	8.9	271		1220	8.9	271
	2000	2.0	61		2040	1.7	52
2 F	0325	7.4	226	17 Sa	0700	8.4	256
	0730	6.9	210		0755	8.4	256
	1305	9.3	283		1155	9.0	274
	2040	1.0	30		2115	1.5	46
3 Sa	0600	7.8	238	18 Su	1200	9.1	277
	0810	7.6	232		2150	1.4	43
	1325	9.6	293				
	2125	0.3	9				
4 Su	0710	8.3	253	19 M	1220	9.1	277
	0855	8.1	247		2225	1.4	43
	1345	9.8	299				
	2210	0.0	0				
5 M	0815	8.6	262	20 Tu	1240	9.0	274
	0940	8.5	259		2305	1.6	49
	1400	9.8	299				
	2300	0.1	3				
6 Tu	0910	8.8	268	21 W	0950	8.8	268
	1040	8.7	265		1045	8.8	268
	1425	9.5	290		1255	8.9	271
	2350	0.6	18		2340	1.9	58
7 W	0955	8.8	268	22 Th	1000	8.8	268
	1200	8.6	262				
	1450	9.0	274				
8 Th	0045	1.3	40	23 F	0020	2.3	70
	1035	8.8	268		1015	8.7	265
	1400	8.2	250				
	1500	8.2	250				
9 F	0140	2.2	67	24 Sa	0055	2.9	88
	1100	8.7	265		1030	8.7	265
10 Sa	0240	3.2	98	25 Su	0135	3.5	107
	1110	8.6	262		1030	8.6	262
	1825	6.2	189				
	2040	6.3	192				
11 Su	0335	4.2	128	26 M	0215	4.3	131
	1110	8.6	262		1020	8.6	262
	1815	5.3	162		1755	5.6	171
	2255	6.1	186		2125	5.8	177
12 M	0430	5.1	155	27 Tu	0300	5.2	158
	1120	8.6	262		1030	8.8	268
	1835	4.3	131		1755	4.4	134
13 Tu	0235	6.5	198	28 W	0210	6.1	186
	0525	6.0	183		0340	6.1	186
	1140	8.7	265		1045	9.0	274
	1900	3.5	107		1825	3.1	94
14 W	0350	7.1	216	29 Th	1105	9.4	287
	0610	6.8	207		1900	1.9	58
	1200	8.7	265				
	1935	2.7	82				
15 Th	0455	7.7	235	30 F	1125	9.9	302
	0650	7.5	229		1940	0.8	24
	1220	8.8	268				
	2005	2.1	64				

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	1145	10.2	311	16 Su	1055	9.5	290
	2025	0.0	0		2055	1.3	40
2 Su	0650	8.7	265	17 M	1130	9.5	290
	0715	8.7	265		2130	1.3	40
	1215	10.4	317				
	2110	-0.4	-12				
3 M	0730	9.0	274	18 Tu	1205	9.4	287
	0825	9.0	274		2205	1.3	40
	1250	10.4	317				
	2155	-0.4	-12				
4 Tu	0805	9.1	277	19 W	0835	8.9	271
	0935	9.0	274		0945	8.9	271
	1330	10.1	308		1240	9.2	280
	2240	0.0	0		2240	1.6	49
5 W	0835	9.1	277	20 Th	0840	8.9	271
	1050	8.8	268		1055	8.7	265
	1410	9.5	290		1310	8.9	271
	2330	0.7	21		2315	1.9	58
6 Th	0905	9.0	274	21 F	0850	8.8	268
	1210	8.4	256		1205	8.3	253
	1440	8.6	262		1340	8.4	256
					2345	2.5	76
7 F	0015	1.7	52	22 Sa	0855	8.8	268
	0925	9.0	274				
	1410	7.6	232				
	1440	7.6	232				
8 Sa	0100	2.8	85	23 Su	0020	3.2	98
	0925	9.0	274		0840	8.8	268
	1730	6.4	195				
	1830	6.4	195				
9 Su	0140	4.1	125	24 M	0050	4.0	122
	0930	9.0	274		0835	8.9	271
	1735	5.4	165		1715	5.8	177
	2100	5.7	174		1920	5.9	180
10 M	0220	5.2	158	25 Tu	0110	5.0	152
	0950	9.1	277		0850	9.1	277
	1750	4.4	134		1645	4.7	143
11 Tu	1015	9.1	277	26 W	0910	9.4	287
	1815	3.5	107		1720	3.5	107
12 W	1035	9.1	277	27 Th	0930	9.7	296
	1845	2.8	85		1800	2.3	70
13 Th	1045	9.2	280	28 F	0950	10.1	308
	1915	2.2	67		1840	1.2	37
14 F	1020	9.3	283	29 Sa	1020	10.5	320
	1950	1.8	55		1925	0.4	12
15 Sa	1025	9.4	287	30 Su	1105	10.7	326
	2020	1.5	46		2010	-0.1	-3
				31 M	1155	10.6	323
					2055	-0.3	-9

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 2.5 feet (0.8 meter) to refer these levels to the datum of N.O.S. charts.

VANCOUVER, BRITISH COLUMBIA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0155	3.1	94	16 Tu	0230	5.8	177
	0915	16.0	488		0930	15.5	472
	1525	9.8	299		1620	7.6	232
	1955	11.9	363		2130	11.0	335
2 Tu	0235	4.3	131	17 W	0300	7.4	226
	0945	16.0	488		0950	15.1	460
	1620	8.6	262		1705	6.8	207
	2110	11.3	344		2255	10.8	329
3 W	0315	5.9	180	18 Th	0335	9.0	274
	1015	15.9	485		1015	14.7	448
	1715	7.2	219		1755	6.0	183
	2240	11.0	335				
4 Th	0400	7.7	235	19 F	0055	11.1	338
	1045	15.7	479		0420	10.5	320
	1810	5.7	174		1035	14.2	433
					1840	5.4	165
5 F	0025	11.3	344	20 Sa	0245	12.1	369
	0500	9.6	293		0530	11.8	360
	1120	15.4	469		1100	13.8	421
	1905	4.3	131		1930	4.8	146
6 Sa	0225	12.3	375	21 Su	0350	13.1	399
	0620	11.2	341		0730	12.5	381
	1155	15.2	463		1130	13.4	408
	1955	3.0	91		2020	4.3	131
7 Su	0350	13.6	415	22 M	0435	14.0	427
	0750	12.2	372		0905	12.6	384
	1240	14.9	454		1220	13.2	402
	2050	2.1	64		2110	3.7	113
8 M	0450	14.7	448	23 Tu	0515	14.5	442
	0910	12.5	381		1000	12.4	378
	1330	14.7	448		1320	13.2	402
	2145	1.4	43		2155	3.2	98
9 Tu	0535	15.5	472	24 W	0550	14.9	454
	1020	12.5	381		1040	12.2	372
	1430	14.5	442		1425	13.4	408
	2235	1.0	30		2235	2.6	79
10 W	0620	15.9	485	25 Th	0620	15.	460
	1115	12.1	369		1115	11.9	363
	1535	14.3	436		1525	13.6	415
	2320	1.0	30		2315	2.2	67
11 Th	0655	16.1	491	26 F	0645	15.3	466
	1205	11.6	354		1155	11.4	347
	1635	14.0	427		1620	13.7	418
					2350	2.1	64
12 F	0005	1.3	40	27 Sa	0710	15.5	472
	0730	16.1	491		1235	10.7	326
	1255	11.0	335		1715	13.6	415
	1735	13.6	415				
13 Sa	0045	2.0	61	28 Su	0025	2.3	70
	0805	16.1	491		0735	15.7	479
	1345	10.2	311		1320	9.9	302
	1830	13.0	396		1810	13.3	405
14 Su	0125	3.0	91	29 M	0100	3.0	91
	0835	16.0	488		0800	15.8	482
	1435	9.4	287		1405	8.8	268
	1925	12.3	375		1910	12.9	393
15 M	0200	4.3	131	30 Tu	0135	4.2	128
	0900	15.8	482		0825	15.9	485
	1530	8.5	259		1450	7.6	232
	2025	11.6	354		2015	12.4	378
				31 W	0215	5.7	174
					0855	15.9	485
					1540	6.3	192
					2125	12.0	366

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0255	7.5	229	16 F	0310	10.0	305
	0920	15.7	479		0900	14.0	427
	1630	5.2	158		1635	5.3	162
	2245	11.8	360				
2 F	0345	9.3	283	17 Sa	0005	12.0	366
	0950	15.4	469		0355	11.1	338
	1725	4.2	128		0920	13.5	411
					1725	5.1	155
3 Sa	0040	12.2	372	18 Su	0150	12.5	381
	0450	10.9	332		0505	11.9	363
	1025	14.9	454		0945	13.1	399
	1825	3.5	107		1820	5.0	152
4 Su	0230	13.1	399	19 M	0300	13.2	402
	0615	12.1	369		0715	12.3	375
	1110	14.4	439		1030	12.7	387
	1930	3.0	91		1925	4.7	143
5 M	0345	14.0	427	20 Tu	0350	13.7	418
	0800	12.4	378		0855	12.1	369
	1210	14.0	427		1140	12.5	381
	2035	2.6	79		2030	4.3	131
6 Tu	0435	14.7	448	21 W	0430	14.1	430
	0920	12.2	372		0940	11.7	357
	1330	13.7	418		1310	12.6	384
	2130	2.3	70		2120	3.7	113
7 W	0515	15.1	460	22 Th	0505	14.3	436
	1020	11.6	354		1015	11.2	341
	1450	13.6	415		1430	12.9	393
	2225	2.1	64		2205	3.2	98
8 Th	0550	15.3	466	23 F	0530	14.5	442
	1110	10.9	332		1050	10.5	320
	1555	13.6	415		1535	13.3	405
	2310	2.3	70		2250	3.0	91
9 F	0625	15.4	469	24 Sa	0555	14.8	451
	1155	10.0	305		1130	9.6	293
	1655	13.6	415		1635	13.5	411
	2350	2.8	85		2325	3.1	94
10 Sa	0650	15.4	469	25 Su	0620	15.0	457
	1235	9.2	280		1205	8.5	259
	1745	13.3	405		1730	13.6	415
11 Su	0025	3.5	107	26 M	0005	3.7	113
	0720	15.4	469		0640	15.2	463
	1315	8.3	253		1250	7.2	219
	1835	13.0	396		1825	13.6	415
12 M	0100	4.6	140	27 Tu	0040	4.8	146
	0740	15.3	466		0705	15.4	469
	1400	7.5	229		1330	5.9	180
	1925	12.5	381		1925	13.4	408
13 Tu	0130	5.9	180	28 W	0120	6.1	186
	0805	15.1	460		0730	15.5	472
	1435	6.7	204		1415	4.7	143
	2020	12.2	372		2025	13.2	402
14 W	0200	7.3	223				
	0820	14.8	451				
	1515	6.1	186				
	2120	11.9	363				
15 Th	0230	8.7	265				
	0840	14.4	439				
	1555	5.6	171				
	2230	11.8	360				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0200	7.7	235	16 F	0215	9.9	302
	0800	15.3	466		0730	13.6	415
	1500	3.8	116		1455	4.2	128
	2135	13.0	396		2210	12.9	393
2 F	0250	9.3	283	17 Sa	0255	10.7	326
	0830	15.0	457		0750	13.2	402
	1555	3.3	101		1535	4.3	131
	2255	13.0	396		2325	12.9	393
3 Sa	0345	10.6	323	18 Su	0350	11.4	347
	0905	14.5	442		0810	12.7	387
	1650	3.1	94		1615	4.5	137
4 Su	0040	13.3	405	19 M	0050	13.1	399
	0455	11.6	354		0505	11.8	360
	0945	13.8	421		0845	12.3	375
	1755	3.2	98		1715	4.8	146
5 M	0205	13.8	421	20 Tu	0155	13.3	405
	0645	11.9	363		0730	11.7	357
	1045	13.1	399		0945	11.8	360
	1905	3.4	104		1825	4.9	149
6 Tu	0310	14.2	433	21 W	0250	13.6	415
	0820	11.5	351		0835	11.2	341
	1215	12.5	381		1120	11.6	354
	2015	3.5	107		1935	4.7	143
7 W	0355	14.5	442	22 Th	0330	13.8	421
	0925	10.7	326		0910	10.5	320
	1355	12.4	378		1315	11.7	357
	2115	3.6	110		2035	4.5	137
8 Th	0435	14.6	445	23 F	0400	13.9	424
	1015	9.7	296		0945	9.6	293
	1510	12.7	387		1435	12.2	372
	2205	3.8	116		2130	4.4	134
9 F	0505	14.6	445	24 Sa	0425	14.1	430
	1055	8.8	268		1020	8.4	256
	1610	12.9	393		1540	12.8	390
	2250	4.2	128		2215	4.6	140
10 Sa	0535	14.6	445	25 Su	0450	14.3	436
	1130	7.8	238		1100	7.0	213
	1705	13.1	399		1640	13.3	405
	2330	4.9	149		2255	5.2	158
11 Su	0600	14.5	442	26 M	0515	14.6	445
	1210	6.8	207		1135	5.5	168
	1755	13.1	399		1740	13.7	418
					2340	6.1	186
12 M	0005	5.8	177	27 Tu	0540	14.8	451
	0620	14.4	439		1220	4.0	122
	1245	6.0	183		1835	14.0	427
	1840	13.1	399				
13 Tu	0035	6.8	207	28 W	0020	7.2	219
	0640	14.3	436		0610	15.0	457
	1315	5.2	158		1300	2.8	85
	1930	13.1	399		1935	14.2	433
14 W	0105	7.9	241	29 Th	0105	8.5	259
	0700	14.1	430		0635	14.9	454
	1350	4.7	143		1345	2.0	61
	2015	13.0	396		2035	14.3	436
15 Th	0140	9.0	274	30 F	0150	9.7	296
	0715	13.9	424		0710	14.7	448
	1420	4.3	131		1430	1.7	52
	2110	13.0	396		2145	14.2	433
				31 Sa	0245	10.7	326
					0745	14.1	430
					1520	1.9	58
					2300	14.2	433

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (1.2 meters) to refer these levels to the datum of N.O.S. charts.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height (ft)	Height (cm)	Day	Time	Height (ft)	Height (cm)
	h m				h m		
1 Su	0355	11.3	344	16 M	0350	11.4	347
	0825	13.3	405		0715	12.1	369
	1615	2.5	76		1535	3.8	116
					2350	13.8	421
2 M	0015	14.3	436	17 Tu	0520	11.4	347
	0525	11.4	347		0800	11.6	354
	0920	12.4	378		1625	4.3	131
	1720	3.3	101				
3 Tu	0125	14.3	436	18 W	0045	13.8	421
	0715	10.8	329		0710	10.9	332
	1050	11.6	354		0925	11.0	335
	1835	4.1	125		1725	4.8	146
4 W	0215	14.4	439	19 Th	0135	13.8	421
	0825	9.8	299		0755	10.0	305
	1245	11.3	344		1125	10.7	326
	1945	4.7	143		1835	5.2	158
5 Th	0300	14.3	436	20 F	0210	13.8	421
	0915	8.7	265		0835	8.9	271
	1415	11.5	351		1315	11.0	335
	2045	5.2	158		1945	5.7	174
6 F	0340	14.2	433	21 Sa	0245	13.9	424
	0955	7.6	232		0910	7.5	229
	1525	11.9	363		1435	11.7	357
	2135	5.8	177		2045	6.2	189
7 Sa	0410	14.1	430	22 Su	0310	14.0	427
	1030	6.5	198		0945	6.0	183
	1620	12.4	378		1545	12.6	384
	2220	6.5	198		2135	6.9	210
8 Su	0435	13.9	424	23 M	0340	14.2	433
	1105	5.5	168		1025	4.3	131
	1715	12.9	393		1650	13.4	408
	2300	7.3	223		2225	7.8	238
9 M	0500	13.8	421	24 Tu	0410	14.5	442
	1140	4.6	140		1105	2.7	82
	1800	13.3	405		1745	14.2	433
	2340	8.2	250		2315	8.7	265
10 Tu	0515	13.6	415	25 W	0440	14.7	448
	1210	3.9	119		1150	1.5	46
	1850	13.6	415		1845	14.7	448
11 W	0015	9.0	274	26 Th	0005	9.6	293
	0535	13.5	411		0515	14.7	448
	1240	3.4	104		1235	0.7	21
	1930	13.8	421		1945	15.1	460
12 Th	0050	9.8	299	27 F	0055	10.4	317
	0550	13.4	408		0550	14.5	442
	1310	3.1	94		1320	0.4	12
	2015	13.9	424		2045	15.2	463
13 F	0125	10.4	317	28 Sa	0150	11.0	335
	0610	13.2	402		0625	14.1	430
	1340	3.0	91		1410	0.7	21
	2100	13.9	424		2145	15.2	463
14 Sa	0205	10.9	332	29 Su	0250	11.2	341
	0630	12.9	393		0710	13.3	405
	1415	3.1	94		1455	1.4	43
	2155	13.9	424		2245	15.1	460
15 Su	0250	11.2	341	30 M	0410	11.1	338
	0650	12.5	381		0810	12.4	378
	1450	3.4	104		1550	2.5	76
	2250	13.8	421		2340	15.0	457

MAY

Day	Time	Height (ft)	Height (cm)	Day	Time	Height (ft)	Height (cm)
	h m				h m		
1 Tu	0545	10.5	320	16 W	0505	10.7	326
	0925	11.3	344		0805	11.1	338
	1650	3.7	113		1550	4.1	125
					2340	14.4	439
2 W	0035	14.8	451	17 Th	0615	9.9	302
	0705	9.3	283		0945	10.5	320
	1115	10.6	323		1640	5.0	152
	1755	5.0	152				
3 Th	0120	14.6	445	18 F	0020	14.3	436
	0805	8.1	247		0705	8.7	265
	1255	10.5	320		1135	10.4	317
	1900	6.1	186		1745	6.0	183
4 F	0200	14.3	436	19 Sa	0055	14.2	433
	0845	6.9	210		0750	7.2	219
	1420	10.9	332		1315	10.8	329
	2005	7.2	219		1850	7.2	219
5 Sa	0235	14.0	427	20 Su	0125	14.2	433
	0925	5.7	174		0830	5.6	171
	1535	11.7	357		1440	11.7	357
	2100	8.1	247		2000	8.3	253
6 Su	0305	13.7	418	21 M	0200	14.3	436
	1000	4.7	143		0910	3.9	119
	1635	12.5	381		1555	12.8	390
	2155	8.9	271		2105	9.3	283
7 M	0330	13.5	411	22 Tu	0235	14.4	439
	1035	3.8	116		0955	2.3	70
	1725	13.2	402		1700	13.9	424
	2240	9.6	293		2205	10.1	308
8 Tu	0350	13.3	405	23 W	0310	14.6	445
	1105	3.2	98		1040	1.1	34
	1810	13.8	421		1800	14.7	448
	2320	10.2	311		2300	10.8	329
9 W	0410	13.1	399	24 Th	0345	14.6	445
	1135	2.7	82		1125	0.2	6
	1855	14.2	433		1855	15.3	466
					2350	11.2	341
10 Th	0000	10.7	326	25 F	0430	14.5	442
	0430	13.1	399		1215	-0.2	-6
	1205	2.4	73		1945	15.7	479
	1935	14.5	442				
11 F	0035	11.0	335	26 Sa	0050	11.4	347
	0450	13.0	396		0515	14.2	433
	1235	2.3	70		1300	0.0	0
	2015	14.6	445		2035	15.8	482
12 Sa	0115	11.2	341	27 Su	0145	11.3	344
	0515	12.8	390		0610	13.6	415
	1310	2.4	73		1350	0.6	18
	2055	14.6	445		2125	15.7	479
13 Su	0200	11.3	344	28 M	0250	10.9	332
	0545	12.6	384		0705	12.8	390
	1345	2.6	79		1435	1.6	49
	2135	14.5	442		2210	15.6	475
14 M	0250	11.3	344	29 Tu	0405	10.3	314
	0615	12.2	372		0815	11.8	360
	1420	2.9	88		1525	3.0	91
	2220	14.5	442		2255	15.4	469
15 Tu	0350	11.2	341	30 W	0525	9.3	283
	0700	11.7	357		0940	10.8	329
	1505	3.4	104		1615	4.5	137
	2300	14.4	439		2340	15.1	460
				31 Th	0630	8.1	247
					1110	10.3	314
					1710	6.1	186

JUNE

Day	Time	Height (ft)	Height (cm)	Day	Time	Height (ft)	Height (cm)
	h m				h m		
1 F	0015	14.7	448	16 Sa	0610	7.2	219
	0725	6.8	207		1135	10.6	323
	1250	10.3	314		1700	7.3	223
	1810	7.7	235		2345	14.7	448
2 Sa	0050	14.3	436	17 Su	0700	5.7	174
	0805	5.7	174		1315	11.1	338
	1425	11.0	335		1810	8.8	268
	1915	9.0	274				
3 Su	0125	13.9	424	18 M	0020	14.6	445
	0845	4.7	143		0750	4.1	125
	1545	11.9	363		1445	12.1	369
	2025	10.0	305		1925	10.1	308
4 M	0150	13.5	411	19 Tu	0055	14.6	445
	0925	3.8	116		0840	2.7	82
	1645	12.9	393		1605	13.3	405
	2125	10.7	326		2040	11.0	335
5 Tu	0215	13.2	402	20 W	0135	14.6	445
	1000	3.2	98		0930	1.5	46
	1730	13.7	418		1710	14.3	436
	2220	11.1	338		2145	11.5	351
6 W	0240	13.0	396	21 Th	0225	14.6	445
	1035	2.7	82		1020	0.6	18
	1810	14.3	436		1800	15.1	460
	2305	11.4	347		2245	11.7	357
7 Th	0310	13.0	396	22 F	0315	14.5	442
	1105	2.4	73		1110	0.2	6
	1850	14.6	445		1850	15.5	472
	2345	11.5	351		2345	11.6	354
8 F	0340	13.0	396	23 Sa	0410	14.3	436
	1140	2.2	67		1200	0.1	3
	1925	14.7	448		1935	15.7	479
9 Sa	0020	11.5	351	24 Su	0040	11.3	344
	0415	13.0	396		0510	13.9	424
	1215	2.1	64		1245	0.5	15
	2000	14.8	451		2015	15.8	482
10 Su	0100	11.5	351	25 M	0135	10.7	326
	0455	12.9	393		0610	13.3	405
	1250	2.1	64		1330	1.3	40
	2035	14.9	454		2055	15.7	479
11 M	0145	11.3	344	26 Tu	0235	10.0	305
	0535	12.6	384		0715	12.5	381
	1325	2.3	70		1415	2.5	76
	2105	14.9	454		2130	15.6	475
12 Tu	0235	11.0	335	27 W	0340	9.1	277
	0620	12.2	372		0820	11.7	357
	1400	2.7	82		1455	4.0	122
	2140	14.9	454		2205	15.4	469
13 W	0330	10.5	320	28 Th	0440	8.1	247
	0720	11.6	354		0935	10.9	332
	1440	3.4	104		1535	5.6	171
	2210	14.9	454		2240	15.0	457
14 Th	0425	9.7	296	29 F	0535	7.0	213
	0835	11.0	335		1055	10.5	320
	1520	4.4	134		1620	7.4	226
	2245	14.9	454		2310	14.6	445
15 F	0520	8.6	262	30 Sa	0630	6.0	183
	1000	10.6	323		1235	10.6	323
	1605	5.8	177		1710	9.0	274
	2315	14.8	451		2340	14.1	430

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (1.2 meters) to refer these levels to the datum of N.O.S. charts.

VANCOUVER, BRITISH COLUMBIA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Su	0715	5.2	158	16 M	0620	4.4	134
	1420	11.4	347		1325	11.8	360
	1820	10.3	314		1740	10.3	314
					2325	14.6	445
2 M	0005	13.6	415	17 Tu	0720	3.3	101
	0800	4.4	134		1500	12.8	390
	1540	12.4	378		1905	11.4	347
	1945	11.2	341				
3 Tu	0035	13.2	402	18 W	0005	14.4	439
	0845	3.9	119		0815	2.3	70
	1635	13.3	405		1610	13.8	421
	2100	11.6	354		2030	11.9	363
4 W	0105	13.0	396	19 Th	0100	14.3	436
	0925	3.4	104		0915	1.6	49
	1715	13.9	424		1705	14.5	442
	2200	11.8	360		2140	11.9	363
5 Th	0150	12.9	393	20 F	0205	14.2	433
	1005	3.0	91		1010	1.1	34
	1755	14.3	436		1750	15.0	457
	2245	11.7	357		2240	11.5	351
6 F	0235	13.0	396	21 Sa	0315	14.1	430
	1045	2.6	79		1100	0.9	27
	1830	14.5	442		1830	15.2	463
	2325	11.6	354		2335	11.0	335
7 Sa	0325	13.1	399	22 Su	0420	14.0	427
	1125	2.3	70		1145	1.1	34
	1905	14.6	445		1905	15.4	469
8 Su	0000	11.4	347	23 M	0025	10.3	314
	0410	13.1	399		0520	13.7	418
	1200	2.2	67		1230	1.6	49
	1935	14.7	448		1940	15.4	469
9 M	0040	11.1	338	24 Tu	0120	9.4	287
	0455	13.0	396		0620	13.2	402
	1235	2.2	67		1310	2.6	79
	2000	14.9	454		2010	15.4	469
10 Tu	0120	10.7	326	25 W	0210	8.5	259
	0545	12.8	390		0715	12.5	381
	1305	2.5	76		1345	3.9	119
	2025	15.0	457		2040	15.3	466
11 W	0210	10.1	308	26 Th	0300	7.6	232
	0640	12.4	378		0815	11.9	363
	1340	3.1	94		1425	5.4	165
	2055	15.1	460		2105	15.0	457
12 Th	0255	9.2	280	27 F	0350	6.8	207
	0740	11.8	360		0920	11.3	344
	1415	4.2	128		1500	7.0	213
	2120	15.1	460		2135	14.6	445
13 F	0345	8.1	247	28 Sa	0435	6.1	186
	0850	11.4	347		1035	11.1	338
	1455	5.5	168		1535	8.6	262
	2145	15.1	460		2155	14.2	433
14 Sa	0435	6.9	210	29 Su	0525	5.5	168
	1005	11.1	338		1215	11.3	344
	1540	7.1	216		1625	10.0	305
	2215	14.9	454		2220	13.7	418
15 Su	0525	5.6	171	30 M	0615	5.0	152
	1135	11.2	341		1400	11.9	363
	1635	8.8	268		1735	11.1	338
	2245	14.8	451		2250	13.2	402
				31 Tu	0705	4.7	143
					1515	12.7	387
					1915	11.8	360
					2325	12.8	390

AUGUST

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 W	0800	4.3	131	16 Th	0800	2.6	79
	1605	13.3	405		1555	14.0	427
	2045	11.8	360		2040	11.6	354
2 Th	0015	12.7	387	17 F	0100	13.5	411
	0850	3.9	119		0900	2.3	70
	1645	13.7	418		1640	14.4	439
	2140	11.7	357		2145	11.1	338
3 F	0120	12.7	387	18 Sa	0220	13.5	411
	0940	3.4	104		0955	2.1	64
	1725	14.0	427		1720	14.7	448
	2220	11.4	347		2235	10.3	314
4 Sa	0225	12.8	390	19 Su	0335	13.5	411
	1020	3.0	91		1045	2.2	67
	1755	14.2	433		1755	14.8	451
	2300	11.1	338		2325	9.4	287
5 Su	0325	13.1	399	20 M	0435	13.6	415
	1100	2.7	82		1130	2.7	82
	1825	13.4	439		1825	14.9	454
	2335	10.6	323				
6 M	0415	13.2	402	21 Tu	0010	8.5	259
	1135	2.6	79		0530	13.4	408
	1850	14.5	442		1210	3.5	107
					1850	14.9	454
7 Tu	0015	10.0	305	22 W	0050	7.5	229
	0505	13.2	402		0625	13.1	399
	1210	2.8	85		1245	4.6	140
	1915	14.7	448		1915	14.8	451
8 W	0055	9.2	280	23 Th	0135	6.6	201
	0600	13.0	396		0715	12.8	390
	1245	3.4	104		1320	5.9	180
	1935	14.9	454		1940	14.6	445
9 Th	0135	8.2	250	24 F	0215	5.9	180
	0655	12.7	387		0810	12.4	378
	1320	4.4	134		1350	7.2	219
	2000	15.0	457		2005	14.4	439
10 F	0220	7.1	216	25 Sa	0255	5.4	165
	0755	12.4	378		0910	12.2	372
	1355	5.7	174		1430	8.6	262
	2025	15.0	457		2025	14.0	427
11 Sa	0305	6.0	183	26 Su	0335	5.0	152
	0900	12.1	369		1015	12.0	366
	1435	7.2	219		1505	9.8	299
	2050	14.9	454		2045	13.5	411
12 Su	0355	5.0	152	27 M	0415	4.9	149
	1010	12.0	366		1140	12.1	369
	1525	8.8	268		1555	10.8	329
	2120	14.7	448		2110	13.0	396
13 M	0445	4.1	125	28 Tu	0505	4.9	149
	1145	12.1	369		1315	12.5	381
	1620	10.3	314		1705	11.5	351
	2200	14.4	439		2140	12.6	384
14 Tu	0545	3.5	107	29 W	0605	4.9	149
	1335	12.7	387		1425	12.9	393
	1735	11.4	347		1910	11.7	357
	2240	14.1	430		2230	12.2	372
15 W	0650	3.0	91	30 Th	0710	4.8	146
	1455	13.4	408		1520	13.3	405
	1915	11.8	360		2035	11.5	351
	2340	13.7	418		2345	12.0	366
				31 F	0810	4.5	137
					1600	13.6	415
					2120	11.1	338

SEPTEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Sa	0115	12.2	372	16 Su	0245	12.7	387
	0905	4.1	125		0935	3.9	119
	1635	13.7	418		1630	14.4	439
	2155	10.5	320		2225	8.3	253
2 Su	0230	12.5	381	17 M	0350	13.0	396
	0950	3.8	116		1025	4.4	134
	1705	13.9	424		1700	14.4	439
	2230	9.9	302		2305	7.2	219
3 M	0330	12.9	393	18 Tu	0445	13.2	402
	1030	3.6	110		1105	5.1	155
	1730	14.1	430		1730	14.3	436
	2305	9.0	274		2345	6.2	189
4 Tu	0420	13.2	402	19 W	0535	13.4	408
	1105	3.8	116		1145	6.0	183
	1750	14.3	436		1755	14.2	433
	2345	7.9	241				
5 W	0515	13.4	408	20 Th	0020	5.3	162
	1140	4.4	134		0625	13.4	408
	1815	14.5	442		1220	7.1	216
					1815	14.1	430
6 Th	0020	6.8	207	21 F	0055	4.7	143
	0605	13.4	408		0715	13.4	408
	1220	5.3	162		1255	8.1	247
	1835	14.7	448		1835	13.9	424
7 F	0105	5.6	171	22 Sa	0130	4.2	128
	0700	13.4	408		0805	13.4	408
	1255	6.4	195		1330	9.1	277
	1900	14.8	451		1855	13.6	415
8 Sa	0145	4.5	137	23 Su	0205	4.0	122
	0800	13.3	405		0855	13.3	405
	1340	7.8	238		1405	10.0	305
	1930	14.8	451		1915	13.3	405
9 Su	0230	3.7	113	24 M	0240	4.1	125
	0905	13.2	402		0955	13.2	402
	1425	9.1	277		1450	10.7	326
	2000	14.6	445		1935	12.9	393
10 M	0320	3.2	98	25 Tu	0315	4.3	131
	1020	13.1	399		1105	13.1	399
	1520	10.3	314		1545	11.3	344
	2045	14.2	433		2000	12.4	378
11 Tu	0415	3.0	91	26 W	0400	4.6	140
	1155	13.2	402		1220	13.2	402
	1625	11.2	341		1710	11.5	351
	2120	13.6	415		2040	11.9	363
12 W	0515	3.1	94	27 Th	0455	5.0	152
	1320	13.6	415		1325	13.3	405
	1800	11.6	354		1920	11.2	341
	2220	13.0	396		2145	11.4	347
13 Th	0625	3.3	101	28 F	0605	5.2	158
	1425	14.0	427		1420	13.5	411
	1940	11.2	341		2020	10.7	326
	2350	12.5	381		2330	11.2	341
14 F	0740	3.5	107	29 Sa	0715	5.3	162
	1515	14.2	433		1500	13.6	415
	2050	10.3	314		2055	10.0	305
15 Sa	0130	12.4	378	30 Su	0115	11.5	351
	0840	3.6	110		0815	5.2	158
	1555	14.4	439		1530	13.7	418
	2140	9.3	283		2125	9.1	277

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (1.2 meters) to refer these levels to the datum of N.O.S. charts.

VANCOUVER, BRITISH COLUMBIA, 1990

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0230	12.0	366	16 Tu	0405	12.8	390
	0905	5.3	162		1000	7.1	216
	1555	13.8	421		1605	14.1	430
	2200	8.0	244		2240	5.0	152
2 Tu	0330	12.7	387	17 W	0500	13.4	408
	0950	5.5	168		1045	7.9	241
	1620	13.9	424		1630	13.9	424
	2235	6.7	204		2315	4.1	125
3 W	0425	13.3	405	18 Th	0550	13.8	421
	1035	6.0	183		1125	8.7	265
	1645	14.2	433		1650	13.7	418
	2310	5.3	162		2345	3.5	107
4 Th	0520	13.8	421	19 F	0635	14.2	433
	1115	6.8	207		1200	9.5	290
	1710	14.4	439		1710	13.6	415
	2350	4.0	122				
5 F	0615	14.2	433	20 Sa	0020	3.1	94
	1200	7.8	238		0720	14.4	439
	1735	14.6	445		1240	10.2	311
					1730	13.4	408
6 Sa	0030	2.9	88	21 Su	0050	3.0	91
	0710	14.4	439		0805	14.5	442
	1240	8.9	271		1315	10.7	326
	1805	14.6	445		1750	13.2	402
7 Su	0115	2.1	64	22 M	0120	3.1	94
	0810	14.5	442		0850	14.4	439
	1330	9.9	302		1355	11.1	338
	1835	14.5	442		1810	12.9	393
8 M	0200	1.8	55	23 Tu	0155	3.3	101
	0915	14.5	442		0935	14.3	436
	1420	10.7	326		1445	11.4	347
	1910	14.1	430		1835	12.5	381
9 Tu	0250	2.0	61	24 W	0230	3.7	113
	1025	14.5	442		1030	14.2	433
	1525	11.3	344		1545	11.4	347
	1955	13.4	408		1900	11.9	363
10 W	0345	2.5	76	25 Th	0310	4.3	131
	1135	14.5	442		1125	14.1	430
	1650	11.3	344		1725	11.2	341
	2055	12.6	384		1945	11.4	347
11 Th	0445	3.3	101	26 F	0400	4.9	149
	1245	14.5	442		1215	14.0	427
	1835	10.7	326		1905	10.6	323
	2225	11.8	360		2125	10.8	329
12 F	0555	4.1	125	27 Sa	0500	5.5	168
	1340	14.6	445		1300	14.0	427
	1950	9.7	296		1945	9.7	296
					2325	10.5	320
13 Sa	0020	11.4	347	28 Su	0605	6.1	186
	0710	4.9	149		1340	14.0	427
	1425	14.5	442		2015	8.7	265
	2040	8.4	256				
14 Su	0150	11.6	354	29 M	0110	10.9	332
	0815	5.6	171		0715	6.7	204
	1500	14.4	439		1410	14.0	427
	2125	7.2	219		2050	7.4	226
15 M	0305	12.2	372	30 Tu	0230	11.7	357
	0910	6.3	192		0820	7.3	223
	1535	14.3	436		1440	14.1	430
	2205	6.0	183		2125	5.9	180
				31 W	0335	12.7	387
					0915	8.0	244
					1505	14.2	433
					2200	4.3	131

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0435	13.7	418	16 F	0605	14.6	445
	1005	8.7	265		1110	10.9	332
	1535	14.4	439		1545	13.5	411
	2240	2.9	88		2315	2.6	79
2 F	0530	14.5	442	17 Sa	0645	15.0	457
	1055	9.5	290		1150	11.3	344
	1605	14.6	445		1610	13.4	408
	2320	1.7	52		2350	2.4	73
3 Sa	0625	15.2	463	18 Su	0720	15.2	463
	1140	10.3	314		1230	11.5	351
	1640	14.8	451		1630	13.2	402
4 Su	0005	0.9	27	19 M	0020	2.4	73
	0720	15.6	475		0800	15.3	466
	1230	10.9	332		1305	11.6	354
	1715	14.7	448		1655	13.1	399
5 M	0050	0.6	18	20 Tu	0055	2.6	79
	0815	15.8	482		0835	15.3	466
	1325	11.3	344		1350	11.7	357
	1755	14.3	436		1725	12.8	390
6 Tu	0140	0.8	24	21 W	0125	2.9	88
	0910	15.8	482		0915	15.2	463
	1425	11.5	351		1440	11.6	354
	1840	13.6	415		1800	12.3	375
7 W	0225	1.4	43	22 Th	0200	3.4	104
	1010	15.7	479		0950	15.1	460
	1540	11.3	344		1540	11.3	344
	1940	12.7	387		1840	11.8	360
8 Th	0320	2.5	76	23 F	0235	4.0	122
	1105	15.6	475		1030	15.0	457
	1705	10.6	323		1650	10.7	326
	2100	11.6	354		1945	11.1	338
9 F	0415	3.8	116	24 Sa	0320	4.8	146
	1155	15.4	469		1110	14.9	454
	1830	9.4	287		1800	9.9	302
	2245	10.9	332		2125	10.5	320
10 Sa	0515	5.3	162	25 Su	0405	5.8	177
	1240	15.2	463		1145	14.8	451
	1930	8.0	244		1845	8.7	265
					2315	10.3	314
11 Su	0030	10.8	329	26 M	0500	7.0	213
	0625	6.6	201		1215	14.7	448
	1320	14.9	454		1925	7.3	223
	2020	6.7	204				
12 M	0205	11.3	344	27 Tu	0100	10.8	329
	0735	7.9	241		0610	8.3	253
	1400	14.6	445		1250	14.6	445
	2100	5.4	165		2005	5.8	177
13 Tu	0320	12.1	369	28 W	0230	11.8	360
	0835	8.9	271		0725	9.4	287
	1430	14.2	433		1320	14.6	445
	2135	4.4	134		2045	4.2	128
14 W	0425	13.1	399	29 Th	0345	13.1	399
	0935	9.7	296		0835	10.4	317
	1500	13.9	424		1355	14.7	448
	2210	3.5	107		2130	2.7	82
15 Th	0520	13.9	424	30 F	0445	14.3	436
	1025	10.4	317		0940	11.1	338
	1525	13.7	418		1430	14.8	451
	2245	2.9	88		2215	1.4	43

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0540	15.2	463	16 Su	0640	15.4	469
	1035	11.6	354		1140	12.1	369
	1515	15.0	457		1525	13.4	408
	2300	0.5	15		2330	2.4	73
2 Su	0630	15.9	485	17 M	0710	15.5	472
	1130	11.9	363		1215	12.0	366
	1555	14.9	454		1605	13.3	405
	2345	0.0	0				
3 M	0720	16.3	497	18 Tu	0000	2.4	73
	1225	11.9	363		0745	15.6	475
	1645	14.7	448		1255	11.8	360
					1640	13.2	402
4 Tu	0035	0.1	3	19 W	0035	2.5	76
	0810	16.5	503		0815	15.6	475
	1320	11.7	357		1335	11.6	354
	1740	14.2	433		1720	12.8	390
5 W	0120	0.6	18	20 Th	0105	2.8	85
	0855	16.5	503		0845	15.6	475
	1425	11.3	344		1420	11.2	341
	1840	13.3	405		1810	12.4	378
6 Th	0205	1.6	49	21 F	0140	3.3	101
	0940	16.4	500		0910	15.6	475
	1535	10.5	320		1510	10.6	323
	1950	12.3	375		1905	11.8	360
7 F	0255	3.0	91	22 Sa	0210	4.1	125
	1020	16.3	497		0940	15.6	475
	1650	9.4	287		1600	9.8	299
	2110	11.3	344		2010	11.2	341
8 Sa	0340	4.7	143	23 Su	0245	5.1	155
	1100	16.0	488		1010	15.5	472
	1755	8.1	247		1655	8.8	268
	2245	10.6	323		2135	10.7	326
9 Su	0430	6.5	198	24 M	0330	6.5	198
	1140	15.6	475		1035	15.3	466
	1855	6.8	207		1745	7.5	229
					2305	10.6	323
10 M	0030	10.6	323	25 Tu	0415	8.1	247
	0530	8.3	253		1105	15.2	463
	1215	15.1	460		1835	6.1	186
	1940	5.6	171				
11 Tu	0215	11.4	347	26 W	0050	11.1	338
	0645	9.8	299		0520	9.7	296
	1250	14.6	445		1140	15.0	457
	2025	4.5	137		1925	4.6	140
12 W	0345	12.5	381	27 Th	0240	12.3	375
	0800	10.9	332		0645	11.1	338
	1320	14.1	430		1215	15.0	457
	2105	3.7	113		2015	3.3	101
13 Th	0440	13.6	415	28 F	0355	13.6	415
	0910	11.6	354		0810	12.0	366
	1350	13.7	418		1255	14.9	454
	2140	3.2	98		2105	2.0	61
14 F	0525	14.5	442	29 Sa	0455	14.7	448
	1010	11.9	363		0920	12.4	378
	1420	13.5	411		1345	15.0	457
	2220	2.8	85		2155	1.0	30
15 Sa	0605	15.1	460	30 Su	0545	15.6	475
	1100	12.1	369		1025	12.5	381
	1450	13.4	408		1445	15.0	457
	2255	2.5	76		2245	0.4	12
				31 M	0625	16.1	491
					1120	12.2	372
					1545	14.9	454
					2335	0.2	6

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (1.2 meters) to refer these levels to the datum of N.O.S. charts.

KETCHIKAN, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm
1	0323	15.2	463
M	0910	3.4	104
	1506	15.5	472
	2128	-0.2	-6
2	0402	15.3	466
Tu	1000	3.2	98
	1555	14.4	439
	2210	1.0	30
3	0445	15.3	466
W	1057	3.1	94
	1653	13.2	402
	2257	2.3	70
4	0535	15.3	466
Th	1207	2.8	85
	1806	12.1	369
	2355	3.7	113
5	0631	15.3	466
F	1321	2.2	67
	1930	11.5	351
6	0104	4.7	143
Sa	0738	15.5	472
	1436	1.2	37
	2100	11.7	357
7	0223	5.2	158
Su	0847	16.0	488
	1542	-0.1	-3
	2214	12.5	381
8	0334	5.1	155
M	0951	16.7	509
	1641	-1.3	-40
	2312	13.6	415
9	0438	4.5	137
Tu	1048	17.4	530
	1733	-2.3	-70
10	0001	14.6	445
W	0531	3.8	116
	1141	18.0	549
	1818	-2.9	-88
11	0048	15.4	469
Th	0621	3.1	94
	1228	18.2	555
	1901	-3.1	-94
12	0129	15.9	485
F	0707	2.6	79
	1313	18.0	549
	1940	-2.8	-85
13	0206	16.2	494
Sa	0748	2.4	73
	1355	17.3	527
	2019	-2.0	-61
14	0243	16.1	491
Su	0830	2.4	73
	1437	16.3	497
	2054	-0.9	-27
15	0320	15.8	482
M	0915	2.7	82
	1516	15.0	457
	2130	0.4	12
16	0355	15.4	469
Tu	0959	3.1	94
	1600	13.5	411
	2205	1.9	58
17	0432	14.8	451
W	1047	3.6	110
	1647	12.1	369
	2242	3.5	107
18	0511	14.2	433
Th	1143	4.0	122
	1748	10.8	329
	2325	4.9	149
19	0559	13.6	415
F	1249	4.1	125
	1907	9.9	302
20	0023	6.1	186
Sa	0655	13.2	402
	1411	3.8	116
	2047	9.8	299
21	0139	6.8	207
Su	0803	13.2	402
	1518	3.0	91
	2203	10.5	320
22	0257	6.8	207
M	0911	13.7	418
	1614	1.9	58
	2255	11.4	347
23	0358	6.2	189
Tu	1003	14.5	442
	1659	0.8	24
	2334	12.5	381
24	0448	5.4	165
W	1051	15.4	469
	1735	-0.3	-9
25	0009	13.5	411
Th	0532	4.5	137
	1133	16.2	494
	1810	-1.2	-37
26	0042	14.4	439
F	0611	3.5	107
	1213	16.9	515
	1845	-1.9	-58
27	0113	15.3	466
Sa	0650	2.6	79
	1251	17.3	527
	1918	-2.2	-67
28	0145	16.0	488
Su	0729	1.8	55
	1331	17.2	524
	1953	-2.0	-61
29	0217	16.4	500
M	0809	1.3	40
	1411	16.8	512
	2027	-1.4	-43
30	0251	16.7	509
Tu	0851	1.0	30
	1454	15.9	485
	2104	-0.3	-9
31	0328	16.7	509
W	0939	1.0	30
	1543	14.6	445
	2141	1.1	34

FEBRUARY

Day	Time	Height ft	Height cm
1	0410	16.3	497
Th	1034	1.2	37
	1637	13.1	399
	2227	2.7	82
2	0457	15.8	482
F	1138	1.6	49
	1746	11.6	354
	2322	4.3	131
3	0556	15.2	463
Sa	1256	1.8	55
	1916	10.8	329
4	0035	5.6	171
Su	0711	14.7	448
	1420	1.3	40
	2055	11.0	335
5	0203	6.0	183
M	0833	14.9	454
	1534	0.4	12
	2211	12.0	366
6	0332	5.5	168
Tu	0945	15.6	475
	1635	-0.7	-21
	2307	13.3	405
7	0435	4.5	137
W	1046	16.4	500
	1723	-1.6	-49
	2352	14.5	442
8	0528	3.3	101
Th	1137	17.0	518
	1805	-2.2	-67
9	0031	15.4	469
F	0613	2.3	70
	1219	17.4	530
	1842	-2.3	-70
10	0105	16.1	491
Sa	0651	1.6	49
	1259	17.3	527
	1917	-2.1	-64
11	0137	16.5	503
Su	0730	1.1	34
	1337	16.8	512
	1950	-1.4	-43
12	0209	16.5	503
M	0805	1.0	30
	1414	15.9	485
	2021	-0.4	-12
13	0239	16.2	494
Tu	0841	1.2	37
	1451	14.8	451
	2051	0.8	24
14	0309	15.7	479
W	0919	1.6	49
	1527	13.5	411
	2121	2.2	67
15	0338	15.0	457
Th	0957	2.2	67
	1608	12.1	369
	2153	3.6	110
16	0413	14.3	436
F	1045	3.0	91
	1655	10.8	329
	2229	4.9	149
17	0452	13.5	411
Sa	1145	3.6	110
	1808	9.6	293
	2317	6.2	189
18	0548	12.7	387
Su	1305	3.9	119
	1954	9.3	283
19	0036	7.0	213
M	0706	12.4	378
	1433	3.4	104
	2129	9.9	302
20	0220	7.0	213
Tu	0828	12.7	387
	1540	2.4	73
	2228	11.1	338
21	0334	6.2	189
W	0937	13.7	418
	1627	1.1	34
	2304	12.4	378
22	0427	4.9	149
Th	1030	14.8	451
	1707	-0.1	-3
	2337	13.7	418
23	0512	3.5	107
F	1112	15.9	485
	1741	-1.1	-34
24	0009	15.0	457
Sa	0551	2.0	61
	1155	16.8	512
	1816	-1.8	-55
25	0040	16.1	491
Su	0629	0.6	18
	1236	17.3	527
	1851	-2.0	-61
26	0112	17.0	518
M	0711	-0.5	-15
	1317	17.3	527
	1925	-1.7	-52
27	0144	17.6	536
Tu	0750	-1.2	-37
	1358	16.8	512
	2002	-1.0	-30
28	0219	17.7	539
W	0835	-1.4	-43
	1443	15.8	482
	2038	0.2	6

MARCH

Day	Time	Height ft	Height cm
1	0257	17.4	530
Th	0920	-1.0	-30
	1532	14.5	442
	2119	1.6	49
2	0339	16.7	509
F	1013	-0.3	-9
	1628	12.9	393
	2205	3.3	101
3	0429	15.7	479
Sa	1119	0.7	21
	1736	11.4	347
	2301	4.9	149
4	0533	14.6	445
Su	1238	1.4	43
	1911	10.7	326
5	0028	6.0	183
M	0657	13.8	421
	1407	1.4	43
	2049	11.1	338
6	0210	6.0	183
Tu	0828	13.9	424
	1521	0.8	24
	2158	12.2	372
7	0334	5.0	152
W	0942	14.5	442
	1619	0.0	0
	2248	13.5	411
8	0433	3.7	113
Th	1038	15.3	466
	1705	-0.7	-21
	2329	14.6	445
9	0519	2.4	73
F	1126	15.9	485
	1744	-1.0	-30
10	0002	15.5	472
Sa	0557	1.3	40
	1207	16.2	494
	1816	-1.0	-30
11	0034	16.1	491
Su	0633	0.5	15
	1243	16.2	494
	1848	-0.7	-21
12	0103	16.4	500
M	0708	0.0	0
	1319	15.9	485
	1917	-0.2	-6
13	0130	16.5	503
Tu	0740	-0.2	-6
	1353	15.2	463
	1948	0.7	21
14	0158	16.2	494
W	0811	-0.1	-3
	1427	14.4	439
	2017	1.7	52
15	0227	15.7	479
Th	0843	0.4	12
	1502	13.3	405
	2045	2.8	85
16	0254	15.0	457
F	0920	1.1	34
	1539	12.1	369
	2112	3.9	119
17	0328	14.2	433
Sa	1002	2.0	61
	1624	10.9	332
	2154	5.1	155
18	0408	13.4	408
Su	1055	2.8	85
	1727	9.9	302
	2241	6.1	186
19	0500	12.5	381
M	1209	3.4	104
	1902	9.5	290
	2359	6.9	210
20	0617	12.0	366
Tu	1337	3.3	101
	2039	10.1	308
21	0141	6.8	207
W	0743	12.1	369
	1449	2.5	76
	2134	11.2	341
22	0300	5.7	174
Th	0902	13.0	396
	1542	1.5	46
	2219	12.6	384
23	0358	4.0	122
F	1001	14.2	433
	1627	0.4	12
	2254	14.1	430
24	0443	2.2	67
Sa	1049	15.3	466
	1705	-0.4	-12
	2326	15.6	475
25	0525	0.4	12
Su	1133	16.3	497
	1744	-0.9	-27
26	0000	16.8	512
M	0607	-1.3	-40
	1218	16.8	512
	1819	-1.0	-30
27	0036	17.8	543
Tu	0648	-2.5	-76
	1302	16.9	515
	1858	-0.7	-21
28	0112	18.3	558
W	0731	-3.1	-94
	1346	16.4	500
	1937	0.1	3
29	0150	18.3	558
Th	0817	-3.0	-91
	1435	15.5	472
	2018	1.1	34
30	0232	17.7	539
F	0905	-2.4	-73
	1525	14.3	436
	2102	2.5	76
31	0319	16.7	509
Sa	1000	-1.2	-37
	1623	12.9	393
	2154	3.9	119

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KETCHIKAN, ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0413	15.4	469	16 M	0336	13.4	408
	1103	0.1	3		1024	1.9	58
	1735	11.8	360		1706	10.7	326
	2301	5.1	155		2224	6.0	183
2 M	0522	14.1	430	17 Tu	0429	12.7	387
	1220	1.1	34		1127	2.5	76
	1859	11.4	347		1816	10.5	320
					2339	6.4	195
3 Tu	0031	5.8	177	18 W	0538	12.0	366
	0647	13.2	402		1239	2.7	82
	1342	1.5	46		1932	11.0	335
	2024	11.8	360				
4 W	0209	5.3	162	19 Th	0109	6.0	183
	0816	13.1	399		0703	11.9	363
	1452	1.3	40		1349	2.5	76
	2127	12.8	390		2033	12.0	366
5 Th	0324	4.2	128	20 F	0223	4.7	143
	0929	13.5	411		0822	12.5	381
	1548	1.0	30		1449	1.9	58
	2215	13.8	421		2121	13.3	405
6 F	0417	2.8	85	21 Sa	0322	3.0	91
	1022	14.1	430		0927	13.4	408
	1634	0.7	21		1540	1.3	40
	2254	14.8	451		2203	14.8	451
7 Sa	0459	1.5	46	22 Su	0414	0.9	27
	1110	14.6	445		1022	14.4	439
	1710	0.6	18		1626	0.8	24
	2328	15.5	472		2243	16.2	494
8 Su	0537	0.5	15	23 M	0459	-1.0	-30
	1149	14.9	454		1112	15.3	466
	1745	0.7	21		1708	0.5	15
	2358	15.9	485		2323	17.4	530
9 M	0610	-0.3	-9	24 Tu	0544	-2.6	-79
	1226	14.9	454		1203	15.9	485
	1816	1.0	30		1750	0.5	15
10 Tu	0027	16.2	494	25 W	0003	18.2	555
	0642	-0.7	-21		0630	-3.7	-113
	1301	14.8	451		1250	16.1	491
	1847	1.5	46		1835	0.8	24
11 W	0055	16.2	494	26 Th	0044	18.6	567
	0714	-0.9	-27		0715	-4.1	-125
	1334	14.4	439		1337	15.8	482
	1916	2.1	64		1917	1.3	40
12 Th	0121	15.9	485	27 F	0127	18.4	561
	0745	-0.8	-24		0801	-3.9	-119
	1409	13.8	421		1427	15.2	463
	1945	2.8	85		2003	2.1	64
13 F	0150	15.5	472	28 Sa	0215	17.7	539
	0818	-0.3	-9		0853	-3.1	-94
	1443	13.0	396		1519	14.3	436
	2017	3.6	110		2053	3.0	91
14 Sa	0222	15.0	457	29 Su	0304	16.6	506
	0854	0.3	9		0947	-1.8	-55
	1522	12.1	369		1618	13.4	408
	2053	4.4	134		2151	4.0	122
15 Su	0254	14.2	433	30 M	0402	15.2	463
	0936	1.1	34		1047	-0.5	-15
	1608	11.3	344		1724	12.7	387
	2131	5.3	162		2301	4.8	146

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0509	13.8	421	16 W	0408	13.0	396
	1154	0.7	21		1050	1.4	43
	1835	12.5	381		1740	11.9	363
					2319	5.4	165
2 W	0025	5.0	152	17 Th	0509	12.3	375
	0628	12.8	390		1148	1.9	58
	1303	1.5	46		1836	12.3	375
	1942	12.8	390				
3 Th	0148	4.5	137	18 F	0032	4.8	146
	0749	12.3	375		0624	11.9	363
	1410	2.0	61		1251	2.3	70
	2041	13.4	408		1933	13.1	399
4 F	0257	3.5	107	19 Sa	0147	3.6	110
	0900	12.4	378		0743	12.0	366
	1506	2.2	67		1352	2.4	73
	2130	14.0	427		2024	14.1	430
5 Sa	0350	2.3	70	20 Su	0249	1.9	58
	0959	12.8	390		0855	12.5	381
	1554	2.4	73		1449	2.4	73
	2211	14.7	448		2114	15.3	466
6 Su	0435	1.2	37	21 M	0345	0.1	3
	1048	13.1	399		0958	13.3	405
	1633	2.5	76		1543	2.3	70
	2248	15.2	463		2202	16.5	503
7 M	0513	0.3	9	22 Tu	0435	-1.7	-52
	1133	13.5	411		1056	14.1	430
	1711	2.6	79		1636	2.1	64
	2320	15.5	472		2248	17.5	533
8 Tu	0545	-0.4	-12	23 W	0526	-3.1	-94
	1209	13.6	415		1149	14.8	451
	1744	2.8	85		1724	2.0	61
	2350	15.7	479		2337	18.2	555
9 W	0620	-0.9	-27	24 Th	0614	-4.1	-125
	1245	13.7	418		1240	15.2	463
	1818	3.1	94		1813	2.0	61
10 Th	0021	15.8	482	25 F	0024	18.5	564
	0652	-1.1	-34		0703	-4.4	-134
	1321	13.5	411		1329	15.2	463
	1850	3.4	104		1902	2.2	67
11 F	0053	15.7	479	26 Sa	0112	18.3	558
	0727	-1.0	-30		0750	-4.1	-125
	1356	13.3	405		1421	15.1	460
	1924	3.7	113		1954	2.5	76
12 Sa	0124	15.4	469	27 Su	0203	17.6	536
	0801	-0.8	-24		0840	-3.4	-104
	1432	12.9	393		1510	14.7	448
	1959	4.2	128		2046	3.0	91
13 Su	0200	15.0	457	28 M	0255	16.5	503
	0838	-0.4	-12		0932	-2.2	-67
	1514	12.4	378		1605	14.2	433
	2036	4.7	143		2144	3.5	107
14 M	0235	14.4	439	29 Tu	0347	15.2	463
	0917	0.2	6		1024	-0.9	-27
	1555	12.1	369		1658	13.9	424
	2120	5.1	155		2247	4.0	122
15 Tu	0317	13.8	421	30 W	0450	13.7	418
	1000	0.8	24		1119	0.5	15
	1645	11.9	363		1754	13.6	415
	2215	5.4	165		2356	4.1	125
				31 Th	0559	12.5	381
					1215	1.7	52
					1852	13.5	411

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0111	3.8	116	16 Sa	0553	11.9	363
	0711	11.6	354		1201	2.3	70
	1314	2.8	85		1839	14.1	430
	1948	13.6	415				
2 Sa	0218	3.1	94	17 Su	0108	2.5	76
	0824	11.3	344		0708	11.5	351
	1412	3.5	107		1300	3.1	94
	2038	13.9	424		1935	14.7	448
3 Su	0316	2.3	70	18 M	0217	1.2	37
	0930	11.4	347		0828	11.6	354
	1505	4.0	122		1405	3.5	107
	2124	14.2	433		2033	15.5	472
4 M	0406	1.4	43	19 Tu	0321	-0.3	-9
	1027	11.7	357		0942	12.2	372
	1554	4.2	128		1511	3.7	113
	2206	14.5	442		2130	16.3	497
5 Tu	0448	0.5	15	20 W	0419	-1.7	-52
	1113	12.1	369		1047	13.0	396
	1636	4.2	128		1613	3.5	107
	2243	14.9	454		2227	17.1	521
6 W	0525	-0.2	-6	21 Th	0512	-3.0	-91
	1155	12.5	381		1141	13.9	424
	1718	4.2	128		1710	3.1	94
	2320	15.2	463		2321	17.8	543
7 Th	0601	-0.7	-21	22 F	0604	-3.8	-116
	1233	12.8	390		1232	14.6	445
	1756	4.1	125		1801	2.6	79
	2357	15.4	469				
8 F	0637	-1.1	-34	23 Sa	0013	18.1	552
	1309	13.1	399		0652	-4.2	-128
	1832	4.1	125		1321	15.1	460
					1854	2.3	70
9 Sa	0032	15.5	472	24 Su	0102	18.0	549
	0711	-1.3	-40		0737	-4.0	-122
	1345	13.2	402		1406	15.3	466
	1907	4.1	125		1944	2.2	67
10 Su	0107	15.5	472	25 M	0152	17.5	533
	0745	-1.3	-40		0822	-3.4	-104
	1420	13.2	402		1452	15.3	466
	1946	4.1	125		2034	2.3	70
11 M	0144	15.3	466	26 Tu	0240	16.5	503
	0821	-1.1	-34		0908	-2.3	-70
	1458	13.2	402		1536	15.1	460
	2025	4.2	128		2125	2.5	76
12 Tu	0222	14.9	454	27 W	0331	15.1	460
	0858	-0.7	-21		0952	-1.0	-30
	1536	13.2	402		1621	14.8	451
	2110	4.2	128		2218	2.9	88
13 W	0303	14.3	436	28 Th	0421	13.6	415
	0936	-0.2	-6		1037	0.5	15
	1615	13.3	405		1708	14.3	436
	2200	4.2	128		2317	3.2	98
14 Th	0351	13.5	411	29 F	0517	12.2	372
	1018	0.5	15		1122	2.1	64
	1658	13.5	411		1754	13.9	424
	2253	4.0	122				
15 F	0445	12.7	387	30 Sa	0019	3.3	101
	1106	1.4	43		0622	11.0	335
	1746	13.7	418		1214	3.5	107
	2359	3.4	104		1845	13.5	411

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KETCHIKAN, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0128	3.1	94	16 M	0038	1.6	49
	0739	10.3	314		0645	11.0	335
	1313	4.6	140		1221	3.9	119
	1939	13.4	408		1856	14.7	448
2 M	0236	2.6	79	17 Tu	0154	0.9	27
	0857	10.2	311		0813	10.8	329
	1415	5.2	158		1336	4.6	140
	2036	13.4	408		2004	15.0	457
3 Tu	0334	1.9	58	18 W	0305	-0.1	-3
	1003	10.6	323		0934	11.4	347
	1514	5.4	165		1452	4.7	143
	2126	13.7	418		2113	15.6	475
4 W	0422	1.1	34	19 Th	0409	-1.4	-43
	1101	11.2	341		1041	12.4	378
	1607	5.3	162		1603	4.1	125
	2215	14.2	433		2217	16.5	503
5 Th	0504	0.3	9	20 F	0504	-2.5	-76
	1140	11.9	363		1134	13.5	411
	1656	4.9	149		1702	3.3	101
	2259	14.7	448		2313	17.2	524
6 F	0544	-0.5	-15	21 Sa	0553	-3.3	-101
	1218	12.5	381		1223	14.5	442
	1736	4.4	134		1755	2.4	73
	2337	15.2	463				
7 Sa	0620	-1.1	-34	22 Su	0005	17.6	536
	1254	13.1	399		0637	-3.7	-113
	1815	3.9	119		1305	15.3	466
					1844	1.7	52
8 Su	0016	15.6	475	23 M	0052	17.7	539
	0653	-1.5	-46		0720	-3.5	-107
	1326	13.6	415		1344	15.8	482
	1854	3.5	107		1929	1.2	37
9 M	0053	15.8	482	24 Tu	0137	17.2	524
	0726	-1.8	-55		0759	-2.9	-88
	1358	14.0	427		1423	15.9	485
	1933	3.1	94		2013	1.1	34
10 Tu	0130	15.8	482	25 W	0221	16.3	497
	0800	-1.7	-52		0837	-1.9	-58
	1432	14.3	436		1501	15.8	482
	2011	2.8	85		2059	1.3	40
11 W	0207	15.4	469	26 Th	0304	15.0	457
	0833	-1.4	-43		0915	-0.5	-15
	1505	14.6	445		1537	15.3	466
	2051	2.5	76		2142	1.7	52
12 Th	0248	14.8	451	27 F	0347	13.5	411
	0909	-0.7	-21		0952	1.0	30
	1539	14.7	448		1615	14.7	448
	2139	2.3	70		2231	2.2	67
13 F	0333	13.9	424	28 Sa	0437	12.0	366
	0947	0.2	6		1029	2.6	79
	1618	14.8	451		1655	13.9	424
	2229	2.2	67		2323	2.8	85
14 Sa	0424	12.9	393	29 Su	0534	10.7	326
	1029	1.4	43		1115	4.1	125
	1701	14.8	451		1742	13.2	402
	2330	2.0	61				
15 Su	0528	11.8	360	30 M	0029	3.2	98
	1119	2.7	82		0647	9.7	296
	1754	14.7	448		1210	5.4	165
					1838	12.7	387
				31 Tu	0148	3.2	98
					0821	9.4	287
					1323	6.1	186
					1946	12.5	381

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0300	2.6	79	16 Th	0255	0.3	9
	0942	9.9	302		0931	11.4	347
	1439	6.2	189		1452	5.1	155
	2055	12.9	393		2111	14.9	454
2 Th	0358	1.7	52	17 F	0401	-0.8	-24
	1039	10.8	329		1033	12.6	384
	1545	5.7	174		1603	4.1	125
	2150	13.5	411		2214	15.8	482
3 F	0443	0.7	21	18 Sa	0454	-1.8	-55
	1118	11.7	357		1121	13.9	424
	1635	4.9	149		1659	2.8	85
	2239	14.4	439		2307	16.6	506
4 Sa	0522	-0.2	-6	19 Su	0537	-2.4	-73
	1153	12.7	387		1203	15.0	457
	1718	4.0	122		1749	1.6	49
	2320	15.2	463		2357	17.1	521
5 Su	0557	-1.1	-34	20 M	0618	-2.7	-82
	1225	13.6	415		1240	15.8	482
	1758	3.1	94		1830	0.7	21
	2359	15.8	482				
6 M	0629	-1.7	-52	21 Tu	0039	17.1	521
	1257	14.4	439		0655	-2.4	-73
	1835	2.2	67		1315	16.3	497
					1910	0.1	3
7 Tu	0035	16.2	494	22 W	0120	16.7	509
	0701	-1.9	-58		0729	-1.8	-55
	1325	15.1	460		1347	16.4	500
	1912	1.4	43		1949	0.0	0
8 W	0113	16.3	497	23 Th	0159	15.9	485
	0732	-1.9	-58		0804	-0.8	-24
	1357	15.6	475		1419	16.2	494
	1949	0.8	24		2027	0.2	6
9 Th	0152	16.0	488	24 F	0238	14.7	448
	0803	-1.4	-43		0835	0.5	15
	1429	15.9	485		1451	15.6	475
	2030	0.4	12		2104	0.7	21
10 F	0232	15.3	466	25 Sa	0317	13.4	408
	0840	-0.5	-15		0908	1.9	58
	1501	16.0	488		1523	14.8	451
	2113	0.3	9		2144	1.4	43
11 Sa	0317	14.2	433	26 Su	0357	12.0	366
	0915	0.7	21		0943	3.4	104
	1540	15.8	482		1600	13.9	424
	2202	0.5	15		2232	2.3	70
12 Su	0409	12.9	393	27 M	0450	10.7	326
	1000	2.1	64		1022	4.7	143
	1624	15.3	466		1642	13.0	396
	2301	0.9	27		2330	3.1	94
13 M	0511	11.6	354	28 Tu	0602	9.6	293
	1049	3.6	110		1114	5.9	180
	1719	14.8	451		1738	12.2	372
14 Tu	0013	1.2	37	29 W	0049	3.5	107
	0633	10.6	323		0741	9.3	283
	1156	4.8	146		1237	6.7	204
	1831	14.3	436		1856	11.9	363
15 W	0136	1.0	30	30 Th	0218	3.2	98
	0809	10.5	320		0911	9.9	302
	1324	5.5	168		1412	6.6	201
	1953	14.3	436		2020	12.2	372
				31 F	0324	2.3	70
					1007	10.9	332
					1521	5.8	177
					2124	13.0	396

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0414	1.3	40	16 Su	0435	-0.6	-18
	1045	12.1	369		1057	14.7	448
	1612	4.6	140		1652	2.0	61
	2214	14.1	430		2259	15.8	482
2 Su	0448	0.2	6	17 M	0515	-1.0	-30
	1120	13.3	405		1134	15.7	479
	1654	3.2	98		1734	0.7	21
	2259	15.1	460		2344	16.2	494
3 M	0523	-0.6	-18	18 Tu	0552	-1.0	-30
	1149	14.4	439		1207	16.4	500
	1733	1.8	55		1813	-0.2	-6
	2338	15.9	485				
4 Tu	0557	-1.2	-37	19 W	0024	16.3	497
	1218	15.5	472		0625	-0.7	-21
	1811	0.5	15		1239	16.7	509
					1848	-0.7	-21
5 W	0016	16.4	500	20 Th	0102	15.9	485
	0629	-1.4	-43		0657	-0.1	-3
	1248	16.4	500		1310	16.7	509
	1848	-0.5	-15		1922	-0.8	-24
6 Th	0056	16.6	506	21 F	0138	15.3	466
	0702	-1.2	-37		0729	0.8	24
	1318	16.9	515		1339	16.4	500
	1927	-1.3	-40		1955	-0.6	-18
7 F	0136	16.3	497	22 Sa	0214	14.4	439
	0735	-0.6	-18		0800	1.9	58
	1353	17.2	524		1409	15.8	482
	2009	-1.6	-49		2030	0.0	0
8 Sa	0219	15.5	472	23 Su	0251	13.4	408
	0814	0.3	9		0832	3.0	91
	1427	17.0	518		1438	15.0	457
	2051	-1.4	-43		2106	0.8	24
9 Su	0304	14.4	439	24 M	0331	12.2	372
	0851	1.6	49		0904	4.2	128
	1509	16.5	503		1511	14.1	430
	2143	-0.7	-21		2149	1.8	55
10 M	0359	13.0	396	25 Tu	0418	11.0	335
	0936	3.1	94		0939	5.4	165
	1555	15.6	475		1552	13.1	399
	2242	0.2	6		2240	2.8	85
11 Tu	0504	11.7	357	26 W	0522	10.1	308
	1032	4.5	137		1035	6.4	195
	1658	14.5	442		1642	12.2	372
	2358	1.0	30		2355	3.5	107
12 W	0632	10.9	332	27 Th	0656	9.8	299
	1151	5.6	171		1159	7.0	213
	1819	13.7	418		1807	11.7	357
13 Th	0124	1.2	37	28 F	0122	3.5	107
	0807	11.1	338		0822	10.4	317
	1332	5.8	177		1338	6.8	207
	1948	13.7	418		1936	11.8	360
14 F	0244	0.7	21	29 Sa	0233	2.9	88
	0921	12.1	369		0919	11.5	351
	1500	4.8	146		1451	5.6	171
	2108	14.3	436		2049	12.6	384
15 Sa	0345	0.0	0	30 Su	0324	2.0	61
	1015	13.4	408		0958	12.7	387
	1603	3.4	104		1543	4.1	125
	2209	15.1	460		2145	13.6	415

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0406	1.1	34	16 Tu	0446	0.9	27
	1033	14.1	430		1102	16.1	491
	1627	2.3	70		1718	0.3	9
	2230	14.7	448		2328	15.2	463
2 Tu	0443	0.4	12	17 W	0524	1.1	34
	1104	15.4	469		1134	16.6	506
	1705	0.6	18		1751	-0.5	-15
	2315	15.7	479				
3 W	0520	-0.1	-3	18 Th	0009	15.2	463
	1136	16.6	506		0556	1.4	43
	1745	-1.0	-30		1205	16.8	512
	2357	16.3	497		1826	-1.0	-30
4 Th	0556	-0.2	-6	19 F	0045	15.1	460
	1209	17.6	536		0628	1.9	58
	1824	-2.2	-67		1235	16.7	509
					1857	-1.1	-34
5 F	0039	16.5	503	20 Sa	0120	14.7	448
	0631	0.0	0		0700	2.6	79
	1245	18.1	552		1303	16.4	500
	1905	-2.9	-88		1930	-0.8	-24
6 Sa	0122	16.3	497	21 Su	0155	14.1	430
	0710	0.6	18		0731	3.3	101
	1322	18.2	555		1333	15.9	485
	1950	-3.0	-91		2004	-0.3	-9
7 Su	0208	15.6	475	22 M	0231	13.4	408
	0750	1.5	46		0803	4.1	125
	1402	17.8	543		1405	15.3	466
	2035	-2.5	-76		2040	0.4	12
8 M	0258	14.5	442	23 Tu	0312	12.5	381
	0834	2.7	82		0839	5.0	152
	1446	17.0	518		1440	14.5	442
	2128	-1.5	-46		2122	1.3	40
9 Tu	0355	13.4	408	24 W	0357	11.7	357
	0923	4.0	122		0919	5.3	177
	1539	15.8	482		1519	13.6	415
	2229	-0.2	-6		2208	2.2	67
10 W	0503	12.3	375	25 Th	0453	11.1	338
	1029	5.2	158		1013	6.5	198
	1645	14.5	442		1610	12.7	387
	2343	0.9	27		2306	2.9	88
11 Th	0622	11.9	363	26 F	0603	11.0	335
	1154	5.8	177		1129	6.9	210
	1810	13.5	411		1721	12.0	366
12 F	0103	1.4	43	27 Sa	0017	3.3	101
	0748	12.3	375		0719	11.4	347
	1335	5.5	168		1256	6.5	198
	1940	13.3	405		1847	11.8	360
13 Sa	0218	1.4	43	28 Su	0127	3.2	98
	0854	13.2	402		0816	12.3	375
	1452	4.2	128		1410	5.3	162
	2057	13.7	418		2003	12.2	372
14 Su	0318	1.2	37	29 M	0226	2.9	88
	0945	14.3	436		0900	13.6	415
	1550	2.8	85		1508	3.6	110
	2158	14.3	436		2108	13.0	396
15 M	0406	1.0	30	30 Tu	0316	2.4	73
	1027	15.3	466		0940	14.9	454
	1637	1.4	43		1554	1.7	52
	2246	14.8	451		2203	14.1	430
				31 W	0359	1.9	58
					1019	16.2	494
					1639	-0.2	-6
					2254	15.0	457

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0443	1.6	49	16 F	0528	3.5	107
	1057	17.4	530		1134	16.5	503
	1721	-1.9	-58		1806	-0.7	-21
	2340	15.7	479				
2 F	0523	1.5	46	17 Sa	0033	14.2	433
	1136	18.4	561		0602	3.7	113
	1804	-3.1	-94		1205	16.5	503
					1839	-0.9	-27
3 Sa	0026	16.1	491	18 Su	0110	14.2	433
	0606	1.6	49		0637	4.0	122
	1216	18.9	576		1239	16.4	500
	1849	-3.7	-113		1914	-0.8	-24
4 Su	0113	16.1	491	19 M	0144	13.9	424
	0651	2.0	61		0710	4.3	131
	1259	18.9	576		1311	16.1	491
	1935	-3.7	-113		1946	-0.5	-15
5 M	0200	15.6	475	20 Tu	0221	13.6	415
	0736	2.6	79		0745	4.7	143
	1345	18.4	561		1344	15.6	475
	2025	-3.1	-94		2022	0.0	0
6 Tu	0253	15.0	457	21 W	0259	13.2	402
	0825	3.4	104		0822	5.2	158
	1435	17.4	530		1419	15.0	457
	2115	-2.0	-61		2100	0.6	18
7 W	0348	14.2	433	22 Th	0339	12.8	390
	0920	4.3	131		0904	5.6	171
	1531	16.1	491		1459	14.3	436
	2215	-0.7	-21		2141	1.3	40
8 Th	0452	13.6	415	23 F	0425	12.6	384
	1026	5.0	152		0955	6.0	183
	1636	14.7	448		1547	13.4	408
	2319	0.6	18		2226	2.0	61
9 F	0600	13.4	408	24 Sa	0517	12.6	384
	1147	5.3	162		1055	6.1	186
	1751	13.5	411		1645	12.6	384
					2317	2.7	82
10 Sa	0028	1.7	52	25 Su	0609	12.8	390
	0709	13.6	415		1208	5.7	174
	1315	4.9	149		1754	12.0	366
	1915	12.8	390				
11 Su	0135	2.3	70	26 M	0017	3.2	98
	0811	14.1	430		0705	13.4	408
	1429	3.8	116		1323	4.7	143
	2033	12.8	390		1913	11.9	363
12 M	0235	2.7	82	27 Tu	0119	3.6	110
	0903	14.8	451		0757	14.3	436
	1529	2.6	79		1426	3.1	94
	2137	13.1	399		2028	12.3	375
13 Tu	0329	2.9	88	28 W	0221	3.7	113
	0948	15.5	472		0849	15.4	469
	1617	1.4	43		1521	1.3	40
	2230	13.5	411		2137	13.1	399
14 W	0411	3.1	94	29 Th	0318	3.6	110
	1025	16.0	488		0937	16.6	506
	1656	0.4	12		1614	-0.5	-15
	2315	13.9	424		2233	14.0	427
15 Th	0451	3.3	101	30 F	0409	3.3	101
	1102	16.3	497		1023	17.7	539
	1733	-0.3	-9		1702	-2.1	-64
	2357	14.1	430		2327	14.9	454

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0459	3.1	94	16 Su	0024	13.6	415
	1110	13.6	567		0547	4.8	146
	1751	-3.3	-101		1147	16.1	491
					1827	-0.6	-18
2 Su	0017	15.5	472	17 M	0059	13.8	421
	0550	2.9	88		0622	4.7	143
	1159	19.1	582		1221	16.3	497
	1837	-3.9	-119		1900	-0.8	-24
3 M	0105	15.8	482	18 Tu	0135	14.0	427
	0637	2.8	85		0657	4.6	140
	1246	19.2	585		1257	16.2	494
	1926	-4.0	-122		1933	-0.8	-24
4 Tu	0155	15.9	485	19 W	0207	14.1	430
	0727	2.9	88		0733	4.5	137
	1336	18.8	573		1331	16.0	488
	2014	-3.4	-104		2006	-0.6	-18
5 W	0244	15.7	479	20 Th	0242	14.1	430
	0817	3.2	98		0811	4.5	137
	1425	17.8	543		1406	15.6	475
	2102	-2.4	-73		2038	-0.3	-9
6 Th	0333	15.4	469	21 F	0315	14.1	430
	0915	3.6	110		0851	4.6	140
	1520	16.5	503		1443	15.0	457
	2154	-1.1	-34		2115	0.3	9
7 F	0427	15.0	457	22 Sa	0349	14.1	430
	1013	4.1	125		0933	4.6	140
	1616	14.9	454		1525	14.2	433
	2245	0.4	12		2152	1.1	34
8 Sa	0522	14.7	448	23 Su	0429	14.2	433
	1123	4.3	131		1026	4.5	137
	1722	13.4	408		1616	13.3	405
	2341	1.9	58		2232	2.0	61
9 Su	0619	14.5	442	24 M	0511	14.3	436
	1237	4.2	128		1125	4.3	131
	1839	12.3	375		1715	12.3	375
					2321	3.1	94
10 M	0041	3.2	98	25 Tu	0602	14.5	442
	0718	14.5	442		1233	3.7	113
	1351	3.7	113		1829	11.6	354
	1959	11.7	357				
11 Tu	0143	4.2	128	26 W	0020	4.0	122
	0813	14.6	445		0657	14.9	454
	1457	2.8	85		1346	2.6	79
	2113	11.8	360		1954	11.5	351
12 W	0242	4.8	146	27 Th	0129	4.7	143
	0905	14.9	454		0757	15.5	472
	1552	1.9	58		1453	1.2	37
	2214	12.2	372		2113	12.0	366
13 Th	0337	5.1	155	28 F	0239	4.9	149
	0950	15.2	463		0900	16.3	497
	1638	1.1	34		1554	-0.4	-12
	2304	12.7	387		2222	12.9	393
14 F	0423	5.1	155	29 Sa	0345	4.7	143
	1033	15.5	472		1002	17.3	527
	1715	0.4	12		1651	-1.9	-58
	2347	13.2	402		2320	14.0	427
15 Sa	0505	5.0	152	30 Su	0443	4.1	125
	1110	15.9	485		1056	18.2	555
	1752	-0.2	-6		1741	-3.1	-94
				31 M	0009	15.0	457
					0539	3.4	104
					1150	18.9	576
					1829	-3.8	-116

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JUNEAU, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 M	0345	16.2	494	16 Tu	0419	16.2	494
	0937	3.1	94		1022	2.8	85
	1529	16.3	497		1624	14.3	436
	2153	-0.4	-12		2229	1.8	55
2 Tu	0424	16.3	497	17 W	0456	15.6	475
	1026	3.0	91		1111	3.3	101
	1619	15.2	463		1712	12.8	390
	2235	0.8	24		2307	3.4	104
3 W	0507	16.3	497	18 Th	0536	14.9	454
	1122	2.9	88		1204	3.8	116
	1719	13.9	424		1810	11.5	351
	2324	2.3	70		2352	4.9	149
4 Th	0557	16.2	494	19 F	0620	14.2	433
	1229	2.7	82		1313	4.0	122
	1829	12.7	387		1929	10.6	323
5 F	0023	3.8	116	20 Sa	0051	6.2	189
	0653	16.2	494		0720	13.8	421
	1344	2.1	64		1429	3.7	113
	1954	12.1	369		2104	10.5	320
6 Sa	0135	4.9	149	21 Su	0211	6.9	210
	0800	16.3	497		0826	13.8	421
	1459	1.0	30		1540	2.9	88
	2124	12.4	378		2225	11.1	338
7 Su	0251	5.3	162	22 M	0327	6.8	207
	0910	16.7	509		0935	14.2	433
	1607	-0.3	-9		1636	1.7	52
	2241	13.3	405		2321	12.2	372
8 M	0404	5.0	152	23 Tu	0428	6.1	186
	1017	17.4	530		1031	15.1	460
	1705	-1.6	-49		1721	0.5	15
	2340	14.5	442				
9 Tu	0506	4.3	131	24 W	0001	13.2	402
	1116	18.1	552		0518	5.2	158
	1756	-2.7	-82		1118	16.1	491
					1801	-0.7	-21
10 W	0030	15.6	475	25 Th	0036	14.3	436
	0601	3.5	107		0559	4.2	128
	1207	18.7	570		1159	17.0	518
	1843	-3.4	-104		1836	-1.7	-52
11 Th	0116	16.4	500	26 F	0108	15.3	466
	0648	2.7	82		0639	3.1	94
	1256	19.0	579		1238	17.7	539
	1924	-3.5	-107		1909	-2.4	-73
12 F	0156	17.0	518	27 Sa	0138	16.2	494
	0733	2.2	67		0718	2.1	64
	1339	18.4	573		1316	18.1	552
	2004	-3.2	-98		1943	-2.7	-82
13 Sa	0234	17.2	524	28 Su	0209	17.0	518
	0816	2.0	61		0755	1.3	40
	1423	18.1	552		1355	18.1	552
	2041	-2.4	-73		2018	-2.6	-79
14 Su	0310	17.1	521	29 M	0241	17.5	533
	0857	2.1	64		0836	0.7	21
	1502	17.1	521		1436	17.7	539
	2118	-1.3	-40		2052	-1.9	-58
15 M	0345	16.8	512	30 Tu	0313	17.8	543
	0939	2.4	73		0918	0.4	12
	1542	15.7	479		1518	16.7	509
	2153	0.2	6		2128	-0.8	-24
				31 W	0350	17.7	539
					1004	0.4	12
					1606	15.4	469
					2206	0.8	24

FEBRUARY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 Th	0430	17.4	530	16 F	0435	15.0	457
	1056	0.8	24		1107	2.7	82
	1659	13.8	421		1720	11.5	351
	2251	2.5	76		2256	4.9	149
2 F	0519	16.7	509	17 Sa	0515	14.1	430
	1159	1.3	40		1207	3.5	107
	1808	12.3	375		1823	10.3	314
	2347	4.3	131		2346	6.3	192
3 Sa	0616	15.9	485	18 Su	0608	13.3	405
	1318	1.6	49		1329	3.9	119
	1938	11.4	347		2009	9.8	299
4 Su	0106	5.7	174	19 M	0111	7.2	219
	0732	15.3	466		0727	12.9	393
	1443	1.2	37		1458	3.4	104
	2122	11.6	354		2154	10.4	317
5 M	0239	6.1	186	20 Tu	0251	7.2	219
	0858	15.4	469		0853	13.2	402
	1559	0.2	6		1604	2.2	67
	2241	12.8	390		2254	11.7	357
6 Tu	0402	5.4	165	21 W	0404	6.2	189
	1014	16.1	491		1004	14.2	433
	1658	-0.9	-27		1654	0.8	24
	2337	14.2	433		2330	13.1	399
7 W	0505	4.2	128	22 Th	0457	4.8	146
	1117	17.0	518		1057	15.4	469
	1747	-2.0	-61		1732	-0.5	-15
8 Th	0022	15.5	472	23 F	0004	14.5	442
	0555	2.9	88		0539	3.2	98
	1205	17.8	543		1140	16.6	506
	1830	-2.6	-79		1809	-1.6	-49
9 F	0101	16.5	503	24 Sa	0035	15.9	485
	0641	1.8	55		0619	1.6	49
	1248	18.1	552		1222	17.6	536
	1907	-2.8	-85		1843	-2.3	-70
10 Sa	0134	17.2	524	25 Su	0104	17.1	521
	0721	1.0	30		0657	0.1	3
	1328	18.1	552		1302	18.2	555
	1941	-2.6	-79		1916	-2.6	-79
11 Su	0206	17.5	533	26 M	0134	18.1	552
	0758	0.6	18		0736	-1.1	-34
	1405	17.6	536		1343	18.3	558
	2014	-1.9	-58		1951	-2.3	-70
12 M	0236	17.5	533	27 Tu	0207	18.7	570
	0833	0.4	12		0815	-1.9	-58
	1441	16.8	512		1423	17.8	543
	2046	-0.9	-27		2026	-1.6	-49
13 Tu	0305	17.2	524	28 W	0243	18.9	576
	0908	0.6	18		0857	-2.1	-64
	1516	15.7	479		1508	16.8	512
	2117	0.4	12		2105	-0.3	-9
14 W	0334	16.6	506				
	0943	1.1	34				
	1553	14.4	439				
	2146	1.9	58				
15 Th	0403	15.9	485				
	1022	1.8	55				
	1630	12.9	393				
	2219	3.4	104				

MARCH

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 Th	0319	18.6	567	16 F	0318	15.9	485
	0942	-1.7	-52		0947	0.7	21
	1553	15.4	469		1601	13.0	396
	2144	1.3	40		2142	3.8	116
2 F	0401	17.8	543	17 Sa	0349	15.0	457
	1035	-0.8	-24		1027	1.7	52
	1650	13.7	418		1646	11.7	357
	2230	3.1	94		2221	5.1	155
3 Sa	0451	16.6	506	18 Su	0427	14.1	430
	1136	0.4	12		1117	2.7	82
	1759	12.2	372		1746	10.6	323
	2328	4.9	149		2307	6.3	192
4 Su	0554	15.3	466	19 M	0518	13.1	399
	1256	1.4	43		1231	3.5	107
	1932	11.3	344		1920	10.0	305
5 M	0054	6.1	186	20 Tu	0029	7.2	219
	0720	14.3	436		0637	12.5	381
	1429	1.5	46		1401	3.4	104
	2115	11.7	357		2058	10.6	323
6 Tu	0242	6.1	186	21 W	0216	7.0	213
	0853	14.3	436		0810	12.6	384
	1546	0.8	24		1519	2.5	76
	2231	13.0	396		2202	11.8	360
7 W	0404	4.9	149	22 Th	0332	5.7	174
	1012	15.1	460		0927	13.5	411
	1644	-0.2	-6		1609	1.4	43
	2318	14.4	439		2244	13.4	408
8 Th	0502	3.4	104	23 F	0425	3.9	119
	1108	16.0	488		1028	14.8	451
	1730	-1.0	-30		1654	0.2	6
	2358	15.7	479		2319	15.0	457
9 F	0547	2.0	61	24 Sa	0511	1.9	58
	1156	16.7	509		1118	16.1	491
	1809	-1.4	-43		1733	-0.8	-24
					2351	16.6	506
10 Sa	0032	16.6	506	25 Su	0553	-0.1	-3
	0624	0.7	21		1201	17.1	521
	1235	17.1	521		1809	-1.4	-43
	1841	-1.5	-46				
11 Su	0103	17.3	527	26 M	0025	18.0	549
	0701	-0.1	-3		0633	-1.9	-58
	1312	17.2	524		1243	17.8	543
	1912	-1.2	-37		1847	-1.5	-46
12 M	0130	17.5	533	27 Tu	0100	19.0	579
	0735	-0.7	-21		0714	-3.2	-98
	1346	16.8	512		1326	17.9	546
	1944	-0.6	-18		1924	-1.2	-37
13 Tu	0158	17.5	533	28 W	0134	19.5	594
	0807	-0.8	-24		0756	-3.8	-116
	1420	16.2	494		1412	17.5	533
	2013	0.2	6		2004	-0.4	-12
14 W	0225	17.2	524	29 Th	0213	19.5	594
	0838	-0.7	-21		0841	-3.7	-113
	1452	15.4	469		1457	16.6	506
	2041	1.3	40		2044	0.7	21
15 Th	0249	16.6	506	30 F	0254	18.9	576
	0910	-0.1	-3		0926	-3.0	-91
	1525	14.3	436		1547	15.3	466
	2113	2.5	76		2128	2.2	67
				31 Sa	0339	17.7	539
					1019	-1.6	-49
					1645	13.8	421
					2219	3.8	116

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0434	16.2	494	16 M	0358	14.2	433
	1122	-0.1	-3		1048	1.9	58
	1754	12.6	384		1725	11.4	347
	2326	5.2	158		2251	6.2	189
2 M	0543	14.7	448	17 Tu	0448	13.3	405
	1239	1.1	34		1149	2.6	79
	1923	12.1	369		1839	11.1	338
3 Tu	0100	6.0	183	18 W	0006	6.7	204
	0711	13.7	418		0602	12.6	384
	1405	1.6	49		1306	2.9	88
	2051	12.6	384		1958	11.6	354
4 W	0237	5.5	168	19 Th	0139	6.2	192
	0842	13.6	415		0725	12.5	381
	1519	1.3	40		1418	2.6	79
	2157	13.7	418		2058	12.7	387
5 Th	0352	4.1	125	20 F	0255	4.9	149
	0956	14.2	433		0847	13.0	396
	1615	0.9	27		1517	2.0	61
	2244	14.8	451		2146	14.1	430
6 F	0444	2.6	79	21 Sa	0353	2.9	88
	1052	14.9	454		0954	14.1	430
	1700	0.5	15		1609	1.3	40
	2324	15.9	485		2228	15.7	479
7 Sa	0527	1.2	37	22 Su	0441	0.7	21
	1139	15.5	472		1049	15.2	463
	1737	0.3	9		1654	0.6	18
	2356	16.6	506		2308	17.3	527
8 Su	0603	0.0	0	23 M	0526	-1.4	-43
	1219	15.9	485		1140	16.3	497
	1810	0.4	12		1736	0.3	9
					2345	18.5	564
9 M	0027	17.1	521	24 Tu	0609	-3.2	-98
	0638	-0.8	-24		1227	17.0	518
	1255	16.0	488		1818	0.2	6
	1843	0.6	18				
10 Tu	0054	17.3	527	25 W	0027	19.4	591
	0708	-1.3	-40		0654	-4.4	-134
	1327	15.9	485		1313	17.2	524
	1912	1.1	34		1900	0.4	12
11 W	0121	17.2	524	26 Th	0107	19.8	604
	0739	-1.5	-46		0737	-4.8	-146
	1401	15.5	472		1402	17.0	518
	1944	1.7	52		1945	1.0	30
12 Th	0146	17.0	518	27 F	0151	19.6	597
	0811	-1.3	-40		0825	-4.5	-137
	1433	14.9	454		1451	16.3	497
	2014	2.5	76		2028	1.8	55
13 F	0215	16.5	503	28 Sa	0236	18.8	573
	0843	-0.8	-24		0913	-3.5	-107
	1508	14.0	427		1544	15.3	466
	2046	3.4	104		2118	2.9	88
14 Sa	0244	15.9	485	29 Su	0328	17.5	533
	0921	0.0	0		1006	-2.1	-64
	1544	13.1	399		1643	14.3	436
	2120	4.4	134		2214	4.0	122
15 Su	0318	15.1	460	30 M	0424	16.0	488
	0959	0.9	27		1107	-0.5	-15
	1629	12.1	369		1748	13.6	415
	2158	5.3	162		2323	5.0	152

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0533	14.4	439	16 W	0430	13.7	418
	1215	0.8	24		1115	1.5	46
	1901	13.3	405		1800	12.7	387
					2346	5.7	174
2 W	0049	5.2	158	17 Th	0533	13.0	396
	0657	13.3	405		1215	2.1	64
	1328	1.7	52		1900	13.2	402
	2010	13.6	415				
3 Th	0215	4.6	140	18 F	0101	5.1	155
	0818	12.9	393		0650	12.5	381
	1435	2.1	64		1318	2.5	76
	2111	14.3	436		1956	14.0	427
4 F	0325	3.4	104	19 Sa	0214	3.8	116
	0930	13.2	402		0809	12.7	387
	1536	2.2	67		1421	2.6	79
	2159	15.0	457		2048	15.1	460
5 Sa	0417	2.1	64	20 Su	0317	1.9	58
	1028	13.6	415		0920	13.3	405
	1620	2.3	70		1519	2.5	76
	2241	15.7	479		2138	16.3	497
6 Su	0459	0.9	27	21 M	0412	-0.2	-6
	1118	14.1	430		1025	14.2	433
	1702	2.3	70		1615	2.3	70
	2316	16.2	494		2225	17.6	536
7 M	0537	-0.2	-6	22 Tu	0502	-2.1	-64
	1159	14.5	442		1121	15.1	460
	1739	2.4	73		1705	2.0	61
	2347	16.6	506		2313	18.6	567
8 Tu	0612	-0.9	-27	23 W	0550	-3.6	-110
	1236	14.8	451		1214	15.9	485
	1811	2.6	79		1753	1.8	55
9 W	0017	16.8	512	24 Th	0001	19.3	588
	0644	-1.4	-43		0638	-4.6	-140
	1313	14.9	454		1305	16.3	497
	1846	2.8	85		1841	1.8	55
10 Th	0047	16.8	512	25 F	0048	19.6	597
	0717	-1.6	-49		0725	-4.9	-149
	1346	14.7	448		1355	16.4	500
	1918	3.1	94		1930	2.0	61
11 F	0118	16.7	509	26 Sa	0135	19.3	588
	0751	-1.5	-46		0813	-4.6	-140
	1421	14.4	439		1444	16.2	494
	1951	3.6	110		2020	2.4	73
12 Sa	0150	16.4	500	27 Su	0225	18.6	567
	0825	-1.1	-34		0902	-3.7	-113
	1457	13.9	424		1537	15.8	482
	2027	4.1	125		2113	2.9	88
13 Su	0223	15.9	485	28 M	0316	17.4	530
	0902	-0.6	-18		0953	-2.4	-73
	1537	13.4	408		1627	15.3	466
	2105	4.7	143		2208	3.6	110
14 M	0259	15.3	466	29 Tu	0414	15.9	485
	0942	0.1	3		1045	-0.9	-27
	1619	13.0	396		1723	14.8	451
	2147	5.2	158		2312	4.1	125
15 Tu	0342	14.6	445	30 W	0514	14.4	439
	1027	0.8	24		1141	0.6	18
	1706	12.7	387		1821	14.5	442
	2240	5.6	171				
				31 Th	0023	4.3	131
					0623	13.1	399
					1239	1.9	58
					1919	14.5	442

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0136	3.9	119	16 Sa	0026	3.5	107
	0737	12.3	375		0616	12.6	384
	1341	2.9	88		1228	2.5	76
	2013	14.6	445		1900	15.2	463
2 Sa	0245	3.1	94	17 Su	0136	2.5	76
	0851	12.0	366		0732	12.2	372
	1440	3.6	110		1331	3.3	101
	2106	14.8	451		1954	15.7	479
3 Su	0340	2.1	64	18 M	0245	1.2	37
	0957	12.3	375		0853	12.4	378
	1533	4.0	122		1437	3.8	116
	2151	15.1	460		2055	16.5	503
4 M	0429	1.1	34	19 Tu	0346	-0.4	-12
	1052	12.7	387		1009	13.0	396
	1620	4.2	128		1542	3.8	116
	2233	15.5	472		2156	17.3	527
5 Tu	0511	0.2	6	20 W	0444	-2.0	-61
	1139	13.2	402		1110	14.0	427
	1705	4.2	128		1641	3.5	107
	2310	15.9	485		2250	18.1	552
6 W	0547	-0.5	-15	21 Th	0537	-3.3	-101
	1222	13.7	418		1207	14.9	454
	1743	4.1	125		1737	3.0	91
	2347	16.2	494		2343	18.8	573
7 Th	0624	-1.1	-34	22 F	0627	-4.2	-128
	1258	14.0	427		1259	15.7	479
	1824	4.0	122		1830	2.5	76
8 F	0023	16.4	500	23 Sa	0038	19.1	582
	0700	-1.5	-46		0715	-4.6	-140
	1334	14.2	433		1348	16.2	494
	1900	3.9	119		1929	2.2	67
9 Sa	0058	16.5	503	24 Su	0128	19.0	579
	0736	-1.6	-49		0802	-4.4	-134
	1409	14.3	436		1433	16.5	503
	1936	3.9	119		2010	2.0	61
10 Su	0133	16.4	500	25 M	0216	18.4	561
	0811	-1.6	-49		0846	-3.7	-113
	1446	14.3	436		1520	16.5	503
	2014	4.0	122		2100	2.2	67
11 M	0209	16.2	494	26 Tu	0305	17.3	527
	0846	-1.3	-40		0930	-2.5	-76
	1521	14.2	433		1603	16.2	494
	2054	4.2	128		2149	2.5	76
12 Tu	0245	15.8	482	27 W	0353	16.0	488
	0923	-0.9	-27		1014	-1.1	-34
	1558	14.2	433		1647	15.8	482
	2137	4.3	131		2242	2.9	88
13 W	0329	15.1	460	28 Th	0446	14.4	439
	1001	-0.3	-9		1058	0.6	18
	1637	14.3	436		1731	15.4	469
	2226	4.3	131		2341	3.2	98
14 Th	0414	14.3	436	29 F	0544	12.9	393
	1043	0.6	18		1146	2.2	67
	1722	14.4	439		1821	14.9	454
	2321	4.1	125				
15 F	0511	13.4	408	30 Sa	0044	3.3	101
	1131	1.5	46		0650	11.7	357
	1808	14.7	448		1239	3.7	113
					1911	14.5	442

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JUNEAU, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height (ft)	Height (cm)
1 Su	0152	3.2	98
	0804	11.1	338
	1338	4.8	146
	2003	14.2	433
2 M	0258	2.6	79
	0922	11.0	335
	1443	5.4	165
	2058	14.3	436
3 Tu	0354	1.8	55
	1028	11.5	351
	1543	5.6	171
	2151	14.6	445
4 W	0444	0.9	27
	1122	12.2	372
	1636	5.3	162
	2241	15.1	460
5 Th	0529	0.0	0
	1207	12.9	393
	1721	4.9	149
	2326	15.6	475
6 F	0607	-0.8	-24
	1243	13.6	415
	1803	4.3	131
7 Sa	0006	16.2	494
	0643	-1.5	-46
	1318	14.2	433
	1843	3.8	116
8 Su	0043	16.6	506
	0719	-1.9	-58
	1352	14.7	448
	1922	3.4	104
9 M	0118	16.8	512
	0751	-2.1	-64
	1424	15.1	460
	2000	3.0	91
10 Tu	0155	16.7	509
	0826	-2.0	-61
	1457	15.5	472
	2037	2.7	82
11 W	0232	16.4	500
	0900	-1.6	-49
	1529	15.7	479
	2118	2.4	73
12 Th	0313	15.8	482
	0934	-0.9	-27
	1601	15.9	485
	2203	2.2	67
13 F	0357	14.8	451
	1011	0.2	6
	1640	15.9	485
	2252	2.1	64
14 Sa	0448	13.7	418
	1055	1.5	46
	1723	15.9	485
	2351	2.0	61
15 Su	0551	12.6	384
	1146	2.9	88
	1816	15.8	482
16 M	0101	1.6	49
	0707	11.7	357
	1248	4.2	128
	1916	15.8	482
17 Tu	0216	0.9	27
	0835	11.6	354
	1404	4.9	149
	2026	16.0	488
18 W	0330	-0.2	-6
	0959	12.2	372
	1624	4.9	149
	2136	16.5	503
19 Th	0433	-1.5	-46
	1107	13.4	408
	1633	4.2	128
	2241	17.3	527
20 F	0529	-2.7	-82
	1203	14.6	445
	1732	3.3	101
	2340	18.1	552
21 Sa	0617	-3.6	-110
	1248	15.7	479
	1824	2.3	70
22 Su	0032	18.6	567
	0702	-4.0	-122
	1332	16.6	506
	1912	1.5	46
23 M	0118	18.6	567
	0745	-3.9	-119
	1412	17.1	521
	1956	1.1	34
24 Tu	0204	18.1	552
	0822	-3.2	-98
	1451	17.2	524
	2041	0.9	27
25 W	0246	17.2	524
	0900	-2.1	-64
	1529	17.0	518
	2123	1.1	34
26 Th	0331	15.9	485
	0937	-0.7	-21
	1603	16.5	503
	2207	1.6	49
27 F	0414	14.4	439
	1014	1.0	30
	1640	15.7	479
	2255	2.2	67
28 Sa	0501	12.9	393
	1054	2.7	82
	1717	14.9	454
	2348	2.8	85
29 Su	0559	11.5	351
	1136	4.3	131
	1805	14.1	430
30 M	0052	3.3	101
	0710	10.5	320
	1235	5.7	174
	1901	13.5	411
31 Tu	0206	3.3	101
	0842	10.2	311
	1351	6.5	198
	2006	13.3	405

AUGUST

Day	Time	Height (ft)	Height (cm)
1 W	0325	2.7	82
	1004	10.7	326
	1511	6.5	198
	2119	13.6	415
2 Th	0420	1.7	52
	1103	11.7	357
	1612	5.9	180
	2217	14.4	439
3 F	0505	0.6	18
	1147	12.7	387
	1705	5.0	152
	2305	15.3	466
4 Sa	0547	-0.5	-15
	1221	13.8	421
	1747	4.0	122
	2347	16.2	494
5 Su	0622	-1.4	-43
	1253	14.7	448
	1824	3.0	91
6 M	0027	16.8	512
	0654	-2.0	-61
	1321	15.6	475
	1902	2.0	61
7 Tu	0103	17.3	527
	0726	-2.3	-70
	1351	16.4	500
	1938	1.2	37
8 W	0138	17.3	527
	0758	-2.2	-67
	1421	16.9	515
	2017	0.6	18
9 Th	0215	17.0	518
	0830	-1.7	-52
	1452	17.2	524
	2056	0.2	6
10 F	0256	16.3	497
	0905	-0.8	-24
	1526	17.3	527
	2137	0.1	3
11 Sa	0341	15.3	466
	0942	0.5	15
	1601	17.1	521
	2227	0.3	9
12 Su	0430	13.9	424
	1022	2.1	64
	1646	16.6	506
	2325	0.8	24
13 M	0533	12.5	381
	1115	3.7	113
	1741	15.9	485
14 Tu	0037	1.2	37
	0654	11.4	347
	1223	5.2	158
	1850	15.2	463
15 W	0200	1.2	37
	0832	11.3	344
	1354	5.9	180
	2015	15.1	460
16 Th	0320	0.4	12
	0959	12.3	375
	1624	5.4	165
	2135	15.7	479
17 F	0425	-0.8	-24
	1103	13.7	418
	1633	4.2	128
	2241	16.7	509
18 Sa	0518	-1.9	-58
	1152	15.1	460
	1729	2.7	82
	2336	17.6	536
19 Su	0603	-2.7	-82
	1232	16.3	497
	1817	1.4	43
20 M	0024	18.1	552
	0643	-3.0	-91
	1308	17.2	524
	1859	0.5	15
21 Tu	0107	18.2	555
	0720	-2.8	-85
	1343	17.7	539
	1938	-0.1	-3
22 W	0148	17.8	543
	0754	-2.1	-64
	1415	17.7	539
	2015	-0.3	-9
23 Th	0227	16.9	515
	0829	-1.0	-30
	1446	17.4	530
	2052	-0.1	-3
24 F	0302	15.8	482
	0901	0.4	12
	1516	16.8	512
	2129	0.5	15
25 Sa	0342	14.5	442
	0934	1.9	58
	1547	15.9	485
	2208	1.3	40
26 Su	0422	13.0	396
	1008	3.4	104
	1622	15.0	457
	2255	2.3	70
27 M	0512	11.6	354
	1048	5.0	152
	1701	14.0	427
	2354	3.3	101
28 Tu	0620	10.5	320
	1139	6.3	192
	1800	13.1	399
29 W	0113	3.8	116
	0759	10.0	305
	1303	7.2	219
	1917	12.7	387
30 Th	0242	3.4	104
	0935	10.6	323
	1439	7.1	216
	2043	13.0	396
31 F	0348	2.4	73
	1033	11.8	360
	1551	6.1	186
	2152	13.9	424

SEPTEMBER

Day	Time	Height (ft)	Height (cm)
1 Sa	0436	1.2	37
	1113	13.1	399
	1641	4.7	143
	2244	15.0	457
2 Su	0516	0.1	3
	1145	14.4	439
	1724	3.2	98
	2326	16.1	491
3 M	0550	-0.9	-27
	1214	15.7	479
	1801	1.7	52
4 Tu	0003	17.0	518
	0624	-1.5	-46
	1243	16.8	512
	1838	0.3	9
5 W	0043	17.6	536
	0656	-1.8	-55
	1312	17.8	543
	1915	-0.8	-24
6 Th	0120	17.8	543
	0728	-1.6	-49
	1342	18.4	561
	1953	-1.6	-49
7 F	0159	17.5	533
	0803	-0.9	-27
	1415	18.7	570
	2033	-1.9	-58
8 Sa	0241	16.7	509
	0838	0.1	3
	1451	18.5	564
	2115	-1.7	-52
9 Su	0328	15.5	472
	0917	1.5	46
	1531	17.8	543
	2206	-0.9	-27
10 M	0419	14.1	430
	1001	3.1	94
	1619	16.8	512
	2304	0.2	6
11 Tu	0525	12.6	384
	1058	4.8	146
	1717	15.6	475
12 W	0016	1.2	37
	0652	11.7	357
	1216	6.0	183
	1837	14.6	445
13 Th	0147	1.5	46
	0831	11.9	363
	1400	6.2	189
	2013	14.5	442
14 F	0306	1.0	30
	0949	13.1	399
	1527	5.1	155
	2135	15.1	460
15 Sa	0412	0.1	3
	1044	14.6	445
	1631	3.5	107
	2239	16.1	491
16 Su	0500	-0.7	-21
	1127	16.0	488
	1720	1.9	58
	2329	16.9	515
17 M	0542	-1.2	-37
	1203	17.1	521
	1801	0.5	15
18 Tu	0013	17.4	530
	0617	-1.3	-40
	1238	17.8	543
	1839	-0.5	-15
19 W	0052	17.5	533
	0651	-1.0	-30
	1307	18.1	552
	1915	-1.0	-30
20 Th	0129	17.2	524
	0725	-0.3	-9
	1337	18.0	549
	1948	-1.1	-34
21 F	0204	16.6	506
	0756	0.6	18
	1404	17.6	536
	2023	-0.8	-24
22 Sa	0238	15.7	479
	0825	1.8	55
	1433	17.0	518
	2055	-0.2	-6
23 Su	0314	14.5	442
	0857	3.0	91
	1502	16.1	491
	2130	0.8	24
24 M	0353	13.3	405
	0929	4.3	131
	1534	15.2	463
	2214	1.9	58
25 Tu	0438	12.0	366
	1008	5.6	171
	1614	14.1	430
	2307	3.0	91
26 W	0541	11.0	335
	1101	6.8	207
	1707	13.1	399
27 Th	0021	3.8	116
	0717	10.6	323
	1222	7.6	232
	1828	12.5	381
28 F	0148	3.8	116
	0848	11.1	338
	1408	7.3	223
	2001	12.6	384
29 Sa	0301	3.1	94
	0948	12.3	375
	1524	6.0	183
	2117	13.4	408
30 Su	0352	2.1	64
	1026	13.8	421
	1612	4.3	131
	2212	14.6	445

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0434	1.1	34	16	0513	0.8	24
M	1059	15.2	463	Tu	1132	17.4	530
	1654	2.4	73		1743	0.0	0
	2257	15.8	482		2358	16.4	500
2	0513	0.3	9	17	0548	0.9	27
Tu	1129	16.7	509	W	1203	17.9	546
	1734	0.5	15		1818	-0.8	-24
	2340	16.8	512				
3	0548	-0.3	-9	18	0035	16.5	503
W	1201	18.0	549	Th	0622	1.2	37
	1811	-1.2	-37		1232	18.1	552
					1851	-1.3	-40
4	0022	17.5	533	19	0112	16.4	500
Th	0624	-0.5	-15	F	0654	1.7	52
	1233	19.0	579		1301	18.0	549
	1850	-2.5	-76		1922	-1.4	-43
5	0102	17.8	543	20	0146	16.0	488
F	0659	-0.2	-6	Sa	0727	2.4	73
	1307	19.6	597		1330	17.6	536
	1931	-3.3	-101		1955	-1.1	-34
6	0145	17.6	536	21	0219	15.4	469
Sa	0736	0.4	12	Su	0759	3.2	98
	1345	19.7	600		1358	17.1	521
	2014	-3.4	-104		2029	-0.5	-15
7	0231	16.9	515	22	0254	14.6	445
Su	0816	1.3	40	M	0331	4.1	125
	1425	19.3	588		1428	16.4	500
	2057	-2.8	-85		2105	0.4	12
8	0318	15.8	482	23	0334	13.6	415
M	0900	2.6	79	Tu	0905	5.1	155
	1507	18.3	558		1502	15.5	472
	2149	-1.6	-49		2146	1.4	43
9	0414	14.5	442	24	0419	12.7	387
Tu	0949	4.1	125	W	0945	6.0	183
	1601	17.0	518		1541	14.6	445
	2248	-0.2	-6		2232	2.4	73
10	0523	13.3	405	25	0515	12.0	366
W	1051	5.4	165	Th	1037	6.9	210
	1707	15.4	469		1632	13.6	415
					2333	3.2	98
11	0002	1.1	34	26	0626	11.8	360
Th	0645	12.8	390	F	1151	7.4	226
	1220	6.2	189		1743	12.8	390
	1831	14.3	436				
12	0125	1.8	55	27	0044	3.7	113
F	0812	13.2	402	Sa	0740	12.2	372
	1401	5.9	180		1324	7.0	213
	2005	14.1	430		1911	12.5	381
13	0242	1.7	52	28	0157	3.6	110
Sa	0922	14.3	436	Su	0839	13.2	402
	1522	4.5	137		1439	5.7	174
	2124	14.6	445		2029	13.0	396
14	0343	1.3	40	29	0256	3.1	94
Su	1015	15.5	472	M	0927	14.5	442
	1618	2.8	85		1535	3.8	116
	2226	15.3	466		2135	14.0	427
15	0431	1.0	30	30	0346	2.5	76
M	1055	16.6	506	Tu	1006	16.0	488
	1705	1.3	40		1625	1.7	52
	2316	16.0	488		2229	15.1	460
				31	0431	1.9	58
				W	1044	17.5	533
					1706	-0.4	-12
					2318	16.1	491

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0511	1.5	46	16	0022	15.4	469
Th	1121	18.7	570	F	0555	3.3	101
	1748	-2.2	-67		1201	17.6	536
					1830	-1.1	-34
2	0003	17.0	518	17	0100	15.5	472
F	0553	1.3	40	Sa	0630	3.5	107
	1159	19.7	600		1232	17.6	536
	1830	-3.5	-107		1904	-1.2	-37
3	0048	17.4	530	18	0133	15.4	469
Sa	0633	1.3	40	Su	0705	3.8	116
	1239	20.3	619		1304	17.5	533
	1913	-4.2	-128		1938	-1.1	-34
4	0135	17.3	527	19	0208	15.1	460
Su	0717	1.7	52	M	0737	4.2	128
	1321	20.3	619		1336	17.1	521
	1959	-4.1	-125		2011	-0.7	-21
5	0223	16.9	515	20	0243	14.7	448
M	0801	2.4	73	Tu	0812	4.6	140
	1407	19.7	600		1408	16.6	506
	2046	-3.4	-104		2049	-0.2	-6
6	0313	16.2	494	21	0322	14.2	433
Tu	0851	3.3	101	W	0851	5.2	158
	1457	18.6	567		1444	16.0	488
	2137	-2.1	-64		2126	0.5	15
7	0411	15.3	466	22	0401	13.7	418
W	0945	4.3	131	Th	0931	5.8	177
	1553	17.1	521		1523	15.2	463
	2235	-0.6	-18		2208	1.3	40
8	0515	14.6	445	23	0446	13.4	408
Th	1051	5.2	158	F	1021	6.2	189
	1659	15.5	472		1611	14.3	436
	2340	0.8	24		2251	2.2	67
9	0623	14.3	436	24	0538	13.4	408
F	1213	5.6	171	Sa	1123	6.4	195
	1816	14.2	433		1707	13.4	408
					2346	2.9	88
10	0051	1.9	58	25	0634	13.6	415
Sa	0737	14.5	442	Su	1236	6.0	183
	1342	5.1	155		1818	12.7	387
	1943	13.6	415				
11	0202	2.6	79	26	0049	3.5	107
Su	0839	15.2	463	M	0729	14.3	436
	1455	3.9	119		1347	4.9	149
	2101	13.7	418		1939	12.6	384
12	0304	2.9	88	27	0151	3.8	116
M	0932	15.9	485	Tu	0821	15.2	463
	1554	2.5	76		1454	3.2	98
	2207	14.1	430		2055	13.1	399
13	0356	3.0	91	28	0252	3.8	116
Tu	1017	16.6	506	W	0911	16.4	500
	1642	1.2	37		1550	1.2	37
	2257	14.7	448		2200	14.0	427
14	0441	3.1	94	29	0348	3.6	110
W	1054	17.1	521	Th	0959	17.6	536
	1721	0.2	6		1641	-0.8	-24
	2343	15.1	460		2257	15.0	457
15	0519	3.2	98	30	0441	3.3	101
Th	1129	17.5	533	F	1047	18.8	573
	1756	-0.6	-18		1727	-2.5	-76
					2350	15.9	485

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0529	2.9	88	16	0050	14.7	448
Sa	1155	19.7	600	Su	0612	4.6	140
	1814	-3.7	-113		1213	17.0	518
					1851	-1.0	-30
2	0041	15.6	506	17	0124	14.9	454
Su	0617	2.6	79	M	0650	4.4	134
	1222	20.3	619		1249	17.2	524
	1902	-4.4	-134		1925	-1.2	-37
3	0131	17.0	518	18	0159	15.1	460
M	0704	2.5	76	Tu	0726	4.3	131
	1310	20.3	619		1324	17.2	524
	1948	-4.4	-134		1959	-1.2	-37
4	0219	17.0	518	19	0233	15.1	460
Tu	0753	2.6	79	W	0801	4.3	131
	1359	19.8	604		1357	17.0	518
	2036	-3.8	-116		2033	-1.0	-30
5	0308	16.8	512	20	0305	15.1	460
W	0844	3.0	91	Th	0838	4.4	134
	1450	18.8	573		1431	16.5	503
	2123	-2.7	-82		2105	-0.5	-15
6	0357	16.5	503	21	0339	15.1	460
Th	0939	3.5	107	F	0916	4.5	137
	1545	17.4	530		1508	15.8	482
	2214	-1.2	-37		2142	0.2	6
7	0451	16.0	488	22	0414	15.0	457
F	1038	4.1	125	Sa	1001	4.5	137
	1644	15.7	479		1549	15.0	457
	2307	0.5	15		2216	1.0	30
8	0545	15.7	479	23	0451	15.0	457
Sa	1146	4.4	134	Su	1051	4.5	137
	1749	14.2	433		1640	14.0	427
					2259	2.1	64
9	0006	2.1	64	24	0533	15.1	460
Su	0644	15.4	469	M	1149	4.3	131
	1303	4.3	131		1738	13.0	396
	1906	13.0	396		2348	3.2	98
10	0108	3.4	104	25	0623	15.3	466
M	0744	15.4	469	Tu	1258	3.7	113
	1419	3.7	113		1852	12.3	375
	2025	12.5	381				
11	0210	4.4	134	26	0047	4.2	128
Tu	0840	15.5	472	W	0719	15.7	479
	1522	2.8	85		1411	2.6	79
	2138	12.6	384		2016	12.2	372
12	0311	4.9	149	27	0157	4.9	149
W	0932	15.7	479	Th	0821	16.3	497
	1613	1.8	55		1517	1.1	34
	2239	13.1	399		2139	12.7	387
13	0405	5.1	155	28	0312	5.0	152
Th	1017	16.1	491	F	0925	17.1	521
	1658	0.8	24		1620	-0.6	-18
	2329	13.7	418		2249	13.8	421
14	0454	5.0	152	29	0415	4.6	140
F	1100	16.4	500	Sa	1025	18.1	552
	1737	0.0	0		1713	-2.2	-67
					2345	14.9	454
15	0011	14.2	433	30	0514	3.9	119
Sa	0534	4.8	146	Su	1121	19.0	579
	1139	16.8	512		1804	-3.5	-107
	1814	-0.6	-18				
				31	0035	16.0	488
				M	0606	3.1	94
					1215	19.7	600
					1852	-4.3	-131

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SITKA, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0339	9.9	302	16 Tu	0408	10.1	308
	0921	3.5	107		1017	2.8	85
	1504	10.0	305		1600	8.5	259
	2139	0.2	6		2212	1.8	55
2 Tu	0415	10.1	308	17 W	0445	9.8	299
	1013	3.2	98		1108	2.9	88
	1600	9.2	280		1653	7.6	232
	2220	1.1	34		2244	2.8	85
3 W	0457	10.2	311	18 Th	0521	9.6	293
	1115	2.8	85		1208	2.8	85
	1703	8.3	253		1759	6.7	204
	2304	2.1	64		2319	3.8	116
4 Th	0543	10.4	317	19 F	0601	9.4	287
	1225	2.2	67		1317	2.7	82
	1819	7.5	229		1926	6.2	189
	2357	3.1	94				
5 F	0634	10.6	323	20 Sa	0011	4.6	140
	1337	1.5	46		0657	9.2	280
	1953	7.2	219		1428	2.3	70
					2109	6.3	192
6 Sa	0102	4.0	122	21 Su	0120	5.2	158
	0734	10.7	326		0756	9.2	280
	1452	0.6	18		1534	1.7	52
	2124	7.5	229		2227	6.7	204
7 Su	0218	4.5	137	22 M	0244	5.4	165
	0837	11.0	335		0857	9.4	287
	1556	-0.3	-9		1627	1.0	30
	2238	8.0	244		2320	7.3	223
8 M	0330	4.6	140	23 Tu	0355	5.3	162
	0940	11.4	347		0955	9.8	299
	1654	-1.1	-34		1710	0.3	9
	2337	8.7	265		2355	7.9	241
9 Tu	0438	4.4	134	24 W	0448	4.9	149
	1038	11.7	357		1043	10.3	314
	1745	-1.7	-52		1748	-0.4	-12
10 W	0024	9.2	280	25 Th	0027	8.5	259
	0536	4.0	122		0533	4.4	134
	1130	11.9	363		1125	10.7	326
	1831	-2.0	-61		1824	-0.9	-27
11 Th	0108	9.7	296	26 F	0058	9.1	277
	0625	3.6	110		0616	3.8	116
	1219	11.9	363		1207	11.1	338
	1913	-2.0	-61		1856	-1.2	-37
12 F	0147	10.0	305	27 Sa	0127	9.6	293
	0713	3.3	101		0656	3.1	94
	1308	11.6	354		1249	11.2	341
	1952	-1.6	-49		1930	-1.3	-40
13 Sa	0225	10.2	311	28 Su	0157	10.1	308
	0800	3.0	91		0738	2.5	76
	1350	11.1	338		1331	11.1	338
	2029	-1.0	-30		2002	-1.0	-30
14 Su	0301	10.3	314	29 M	0228	10.5	320
	0843	2.9	88		0819	2.0	61
	1432	10.4	317		1413	10.7	326
	2103	-0.2	-6		2038	-0.5	-15
15 M	0336	10.2	311	30 Tu	0302	10.7	326
	0931	2.8	85		0906	1.6	49
	1515	9.5	290		1459	10.0	305
	2136	0.8	24		2111	0.3	9
				31 W	0336	10.9	332
					0954	1.3	40
					1551	9.1	277
					2150	1.4	43

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0416	10.9	332	16 F	0416	9.5	290
	1050	1.1	34		1109	2.0	61
	1651	8.1	247		1711	6.7	204
	2232	2.5	76		2224	3.8	116
2 F	0501	10.7	326	17 Sa	0455	9.1	277
	1156	1.1	34		1208	2.2	67
	1805	7.2	219		1828	6.0	183
	2321	3.6	110		2303	4.6	140
3 Sa	0556	10.4	317	18 Su	0546	8.7	265
	1312	0.9	27		1327	2.3	70
	1948	6.8	207		2026	5.9	180
4 Su	0033	4.5	137	19 M	0011	5.3	162
	0703	10.2	311		0653	8.5	259
	1436	0.5	15		1449	1.9	58
	2129	7.0	213		2203	6.3	192
5 M	0202	4.9	149	20 Tu	0200	5.5	168
	0821	10.1	308		0819	8.6	262
	1548	-0.1	-3		1555	1.2	37
	2238	7.7	235		2248	7.0	213
6 Tu	0332	4.8	146	21 W	0332	5.1	155
	0932	10.4	317		0926	9.1	277
	1648	-0.7	-21		1640	0.4	12
	2331	8.5	259		2323	7.8	238
7 W	0443	4.2	128	22 Th	0431	4.4	134
	1036	10.7	326		1022	9.7	296
	1736	-1.2	-37		1720	-0.2	-6
					2352	8.5	259
8 Th	0011	9.1	277	23 F	0517	3.4	104
	0536	3.4	104		1110	10.3	314
	1128	11.0	335		1752	-0.7	-21
	1818	-1.4	-43				
9 F	0049	9.7	296	24 Sa	0020	9.3	283
	0621	2.8	85		0559	2.4	73
	1217	11.1	338		1155	10.7	326
	1853	-1.3	-40		1827	-1.0	-30
10 Sa	0121	10.1	308	25 Su	0049	10.0	305
	0703	2.2	67		0637	1.5	46
	1259	10.9	332		1237	10.9	332
	1928	-1.0	-30		1859	-0.9	-27
11 Su	0150	10.4	317	26 M	0117	10.7	326
	0742	1.8	55		0718	0.6	18
	1338	10.5	320		1323	10.9	332
	2000	-0.4	-12		1935	-0.6	-18
12 M	0220	10.4	317	27 Tu	0149	11.1	338
	0819	1.5	46		0800	-0.1	-3
	1417	10.0	305		1406	10.5	320
	2029	0.3	9		2010	0.1	3
13 Tu	0248	10.4	317	28 W	0224	11.4	347
	0858	1.4	43		0844	-0.5	-15
	1454	9.2	280		1454	9.8	299
	2057	1.2	37		2046	0.9	27
14 W	0315	10.2	311				
	0936	1.5	46				
	1533	8.4	256				
	2123	2.1	64				
15 Th	0344	9.9	302				
	1016	1.7	52				
	1618	7.5	229				
	2154	3.0	91				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0259	11.3	344	16 F	0255	9.8	299
	0933	-0.5	-15		0937	0.7	21
	1545	8.9	271		1552	7.4	226
	2124	1.9	58		2115	3.3	101
2 F	0339	11.1	338	17 Sa	0327	9.4	287
	1028	-0.2	-6		1021	1.1	34
	1645	7.9	241		1642	6.7	204
	2209	3.0	91		2147	4.0	122
3 Sa	0425	10.5	320	18 Su	0402	8.9	271
	1132	0.2	6		1115	1.6	49
	1803	7.0	213		1751	6.1	186
	2306	4.0	122		2223	4.6	140
4 Su	0527	9.9	302	19 M	0450	8.4	256
	1253	0.6	18		1230	1.8	55
	1943	6.7	204		1934	5.9	180
					2337	5.2	158
5 M	0024	4.7	143	20 Tu	0604	8.0	244
	0644	9.3	283		1352	1.7	52
	1420	0.5	15		2106	6.4	195
	2118	7.1	216				
6 Tu	0212	4.8	146	21 W	0138	5.2	158
	0813	9.1	277		0734	7.9	241
	1534	0.2	6		1503	1.3	40
	2221	7.8	238		2158	7.1	216
7 W	0342	4.2	128	22 Th	0306	4.5	137
	0934	9.4	287		0857	8.3	253
	1631	-0.2	-6		1553	0.7	21
	2310	8.6	262		2231	7.9	241
8 Th	0441	3.3	101	23 F	0406	3.4	104
	1035	9.7	296		0959	9.0	274
	1717	-0.4	-12		1638	0.3	9
	2344	9.2	280		2304	8.8	268
9 F	0529	2.4	73	24 Sa	0452	2.2	67
	1123	10.0	305		1051	9.6	293
	1753	-0.4	-12		1715	-0.1	-3
					2334	9.7	296
10 Sa	0016	9.8	299	25 Su	0536	0.9	27
	0609	1.6	49		1139	10.1	308
	1209	10.1	308		1752	-0.2	-6
	1826	-0.3	-9				
11 Su	0045	10.1	308	26 M	0006	10.6	323
	0646	0.9	27		0615	-0.4	-12
	1246	10.0	305		1226	10.4	317
	1859	0.1	3		1830	0.0	0
12 M	0111	10.4	317	27 Tu	0038	11.2	341
	0719	0.5	15		0657	-1.3	-40
	1323	9.8	299		1311	10.4	317
	1926	0.6	18		1906	0.4	12
13 Tu	0136	10.4	317	28 W	0111	11.6	354
	0755	0.2	6		0743	-1.9	-58
	1358	9.4	287		1359	10.1	308
	1954	1.2	37		1944	1.0	30
14 W	0201	10.3	314	29 Th	0150	11.7	357
	0827	0.2	6		0828	-2.1	-64
	1436	8.8	268		1449	9.5	290
	2019	1.9	58		2023	1.8	55
15 Th	0227	10.1	308	30 F	0229	11.5	351
	0859	0.3	9		0917	-1.8	-55
	1511	8.2	250		1541	8.7	265
	2047	2.6	79		2107	2.6	79
				31 Sa	0315	10.9	332
					1013	-1.2	-37
					1645	7.9	241
					2157	3.5	107

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0407	10.1	308	16 M	0328	8.7	265
	1117	-0.4	-12		1043	0.8	24
	1802	7.3	223		1732	6.5	198
	2306	4.2	128		2217	4.7	143
2 M	0509	9.2	280	17 Tu	0416	8.2	250
	1233	0.3	9		1143	1.2	37
	1930	7.2	219		1847	6.5	198
					2337	4.9	149
3 Tu	0041	4.5	137	18 W	0526	7.7	235
	0638	8.5	259		1232	1.4	43
	1354	0.6	18		1957	6.9	210
	2050	7.6	232				
4 W	0221	4.1	125	19 Th	0118	4.6	140
	0809	8.2	250		0654	7.5	229
	1503	0.6	18		1359	1.3	40
	2148	8.2	250		2051	7.6	232
5 Th	0337	3.3	101	20 F	0236	3.7	113
	0927	8.4	256		0824	7.7	235
	1558	0.6	18		1457	1.1	34
	2230	8.8	268		2132	8.4	256
6 F	0433	2.3	70	21 Sa	0336	2.4	73
	1027	8.7	265		0933	8.2	250
	1643	0.7	21		1546	1.0	30
	2305	9.4	287		2209	9.3	283
7 Sa	0515	1.3	40	22 Su	0425	0.9	27
	1115	8.9	271		1030	8.8	268
	1720	0.8	24		1631	0.9	27
	2334	9.8	299		2243	10.2	311
8 Su	0550	0.5	15	23 M	0510	-0.5	-15
	1157	9.1	277		1125	9.4	287
	1752	1.1	34		1713	1.0	30
					2320	11.0	335
9 M	0001	10.1	308	24 Tu	0555	-1.8	-55
	0625	-0.1	-3		1214	9.7	296
	1234	9.1	277		1755	1.2	37
	1824	1.4	43				
10 Tu	0029	10.2	311	25 W	0000	11.6	354
	0654	-0.5	-15		0640	-2.6	-79
	1309	9.0	274		1303	9.8	299
	1852	1.8	55		1837	1.5	46
11 W	0055	10.3	314	26 Th	0040	11.9	363
	0726	-0.7	-21		0724	-3.1	-94
	1345	8.7	265		1353	9.6	293
	1921	2.2	67		1922	2.0	61
12 Th	0120	10.2	311	27 F	0122	11.8	360
	0758	-0.7	-21		0813	-3.0	-91
	1420	8.4	256		1445	9.2	280
	1949	2.7	82		2008	2.5	76
13 F	0149	10.0	305	28 Sa	0208	11.4	347
	0833	-0.5	-15		0904	-2.5	-76
	1457	7.9	241		1541	8.6	262
	2018	3.2	98		2059	3.1	94
14 Sa	0217	9.7	296	29 Su	0256	10.7	326
	0912	-0.1	-3		0959	-1.7	-52
	1539	7.4	226		1642	8.2	250
	2048	3.7	113		2157	3.6	110
15 Su	0248	9.2	280	30 M	0354	9.7	296
	0952	0.3	9		1058	-0.8	-24
	1630	6.9	210		1748	7.9	241
	2125	4.2	128		2309	4.0	122

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0501	8.7	265	16 W	0400	8.2	250
	1205	0.1	3		1106	0.5	15
	1901	7.9	241		1802	7.4	226
					2330	4.3	131
2 W	0040	3.9	119	17 Th	0506	7.6	232
	0623	7.9	241		1159	0.9	27
	1312	0.7	21		1854	7.8	238
	2004	8.2	250				
3 Th	0206	3.3	101	18 F	0048	3.7	113
	0749	7.5	229		0625	7.2	219
	1418	1.2	37		1258	1.3	40
	2058	8.6	262		1943	8.4	256
4 F	0316	2.4	73	19 Sa	0202	2.6	79
	0905	7.5	229		0751	7.2	219
	1513	1.6	49		1357	1.6	49
	2142	9.0	274		2031	9.1	277
5 Sa	0409	1.5	46	20 Su	0303	1.3	40
	1009	7.6	232		0907	7.5	229
	1559	1.9	58		1453	1.9	58
	2217	9.4	287		2114	9.9	302
6 Su	0448	0.6	18	21 M	0358	-0.1	-3
	1059	7.9	241		1011	8.0	244
	1637	2.2	67		1548	2.1	64
	2248	9.7	296		2158	10.6	323
7 M	0527	-0.1	-3	22 Tu	0448	-1.5	-46
	1142	8.1	247		1111	8.5	259
	1713	2.4	73		1638	2.2	67
	2319	9.9	302		2243	11.3	344
8 Tu	0600	-0.6	-18	23 W	0536	-2.5	-76
	1222	8.2	250		1207	8.9	271
	1748	2.7	82		1729	2.4	73
	2348	10.1	308		2329	11.7	357
9 W	0632	-1.0	-30	24 Th	0626	-3.2	-98
	1257	8.2	250		1258	9.1	277
	1821	2.9	88		1818	2.5	76
10 Th	0016	10.1	308	25 F	0016	11.9	363
	0707	-1.2	-37		0712	-3.5	-107
	1336	8.2	250		1347	9.1	277
	1852	3.2	98		1907	2.6	79
11 F	0047	10.0	305	26 Sa	0105	11.7	357
	0739	-1.2	-37		0801	-3.3	-101
	1411	8.0	244		1440	9.0	274
	1924	3.4	104		1957	2.8	85
12 Sa	0119	9.9	302	27 Su	0155	11.2	341
	0814	-1.0	-30		0851	-2.7	-82
	1450	7.8	238		1531	8.8	268
	1959	3.7	113		2053	3.1	94
13 Su	0151	9.6	293	28 M	0246	10.4	317
	0851	-0.7	-21		0943	-1.9	-58
	1531	7.5	229		1624	8.7	265
	2035	4.0	122		2152	3.2	98
14 M	0227	9.2	280	29 Tu	0342	9.4	287
	0933	-0.4	-12		1034	-1.0	-30
	1618	7.3	223		1721	8.6	262
	2121	4.3	131		2303	3.3	101
15 Tu	0309	8.7	265	30 W	0445	8.3	253
	1016	0.1	3		1129	0.0	0
	1709	7.3	223		1816	8.6	262
	2216	4.4	134				
				31 Th	0017	3.1	94
					0557	7.4	226
					1223	1.0	30
					1911	8.7	265

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0133	2.6	79	16 Sa	0017	2.5	76
	0715	6.8	207		0600	7.0	213
	1318	1.8	55		1205	1.5	46
	1959	8.8	268		1847	9.1	277
2 Sa	0239	1.9	58	17 Su	0127	1.6	49
	0835	6.6	201		0723	6.7	204
	1414	2.5	76		1304	2.2	67
	2044	9.0	274		1936	9.6	293
3 Su	0334	1.1	34	18 M	0232	0.5	15
	0945	6.7	204		0847	6.8	207
	1506	3.0	91		1404	2.7	82
	2124	9.2	280		2030	10.1	308
4 M	0422	0.4	12	19 Tu	0334	-0.7	-21
	1043	6.9	210		1000	7.2	219
	1553	3.3	101		1509	3.0	91
	2203	9.4	287		2123	10.6	323
5 Tu	0459	-0.2	-6	20 W	0430	-1.8	-55
	1128	7.2	219		1104	7.7	235
	1635	3.5	107		1611	3.1	94
	2238	9.6	293		2219	11.1	338
6 W	0538	-0.7	-21	21 Th	0525	-2.6	-79
	1210	7.4	226		1201	8.2	250
	1716	3.6	110		1710	3.0	91
	2314	9.8	299		2312	11.4	347
7 Th	0613	-1.1	-34	22 F	0614	-3.2	-98
	1249	7.6	232		1253	8.6	262
	1755	3.6	110		1804	2.9	88
	2349	9.9	302				
8 F	0648	-1.3	-40	23 Sa	0002	11.5	351
	1326	7.8	238		0703	-3.3	-101
	1831	3.7	113		1339	8.9	271
					1857	2.7	82
9 Sa	0025	9.9	302	24 Su	0054	11.4	347
	0723	-1.4	-43		0750	-3.1	-94
	1403	7.8	238		1427	9.1	277
	1909	3.7	113		1952	2.5	76
10 Su	0100	9.8	299	25 M	0144	10.9	332
	0759	-1.4	-43		0835	-2.6	-79
	1441	7.9	241		1512	9.2	280
	1947	3.7	113		2043	2.4	73
11 M	0135	9.6	293	26 Tu	0235	10.1	308
	0835	-1.2	-37		0920	-1.8	-55
	1517	7.9	241		1555	9.2	280
	2028	3.7	113		2139	2.4	73
12 Tu	0214	9.3	283	27 W	0327	9.2	280
	0909	-1.0	-30		1000	-0.8	-24
	1555	8.0	244		1641	9.1	277
	2117	3.7	113		2236	2.4	73
13 W	0258	8.8	268	28 Th	0421	8.1	247
	0949	-0.5	-15		1045	0.3	9
	1634	8.2	250		1722	9.0	274
	2208	3.5	107		2342	2.3	70
14 Th	0348	8.2	250	29 F	0521	7.1	216
	1031	0.0	0		1127	1.4	43
	1715	8.4	256		1807	8.9	271
	2308	3.1	94				
15 F	0447	7.6	232	30 Sa	0044	2.0	61
	1117	0.7	21		0633	6.3	192
	1758	8.7	265		1215	2.4	73
					1854	8.8	268

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SITKA, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0150	1.6	49	16 M	0054	0.7	21
	0755	5.9	180		0705	6.4	195
	1308	3.2	98		1219	2.8	85
	1942	8.7	265		1852	9.7	296
2 M	0252	1.1	34	17 Tu	0208	0.0	0
	0918	5.9	180		0836	6.3	192
	1404	3.8	116		1331	3.5	107
	2028	8.8	268		1956	9.9	302
3 Tu	0348	0.6	18	18 W	0318	-0.8	-24
	1024	6.2	189		0958	6.7	204
	1506	4.1	125		1448	3.7	113
	2118	8.9	271		2103	10.2	311
4 W	0435	0.0	0	19 Th	0419	-1.6	-49
	1115	6.6	201		1101	7.4	226
	1603	4.1	125		1601	3.6	110
	2204	9.2	280		2206	10.6	323
5 Th	0518	-0.5	-15	20 F	0515	-2.3	-70
	1201	7.0	213		1153	8.0	244
	1651	4.0	122		1704	3.1	94
	2249	9.4	287		2304	10.9	332
6 F	0557	-1.0	-30	21 Sa	0605	-2.7	-82
	1237	7.4	226		1241	8.6	262
	1736	3.8	116		1801	2.6	79
	2329	9.7	296		2357	11.1	338
7 Sa	0633	-1.4	-43	22 Su	0649	-2.8	-85
	1309	7.7	235		1323	9.1	277
	1816	3.6	110		1851	2.1	64
8 Su	0009	9.9	302	23 M	0048	10.9	332
	0706	-1.6	-49		0732	-2.6	-79
	1344	8.0	244		1401	9.4	287
	1858	3.3	101		1940	1.7	52
9 M	0048	9.9	302	24 Tu	0134	10.5	320
	0741	-1.7	-52		0811	-2.0	-61
	1416	8.3	253		1438	9.6	293
	1937	3.0	91		2026	1.4	43
10 Tu	0125	9.8	299	25 W	0219	9.8	299
	0813	-1.5	-46		0848	-1.2	-37
	1448	8.6	262		1515	9.6	293
	2017	2.7	82		2112	1.3	40
11 W	0206	9.5	290	26 Th	0306	9.0	274
	0845	-1.2	-37		0923	-0.3	-9
	1520	8.9	271		1549	9.5	290
	2102	2.4	73		2200	1.4	43
12 Th	0248	9.0	274	27 F	0353	8.0	244
	0920	-0.7	-21		0959	0.8	24
	1552	9.1	277		1626	9.2	280
	2150	2.1	64		2249	1.5	46
13 F	0336	8.3	253	28 Sa	0444	7.0	213
	0957	0.1	3		1034	1.9	58
	1629	9.3	283		1703	8.9	271
	2245	1.7	52		2348	1.6	49
14 Sa	0434	7.6	232	29 Su	0546	6.2	189
	1037	1.0	30		1109	2.9	88
	1709	9.4	287		1743	8.6	262
	2345	1.2	37				
15 Su	0541	6.8	207	30 M	0051	1.6	49
	1123	1.9	58		0703	5.6	171
	1758	9.6	293		1158	3.7	113
					1837	8.3	253
				31 Tu	0203	1.4	43
					0845	5.5	168
					1304	4.3	131
					1936	8.2	250

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0313	1.0	30	16 Th	0308	-0.5	-15
	1005	5.9	180		0958	6.9	210
	1428	4.6	140		1452	4.0	122
	2042	8.4	256		2057	9.6	293
2 Th	0411	0.4	12	17 F	0411	-1.1	-34
	1100	6.4	195		1055	7.6	232
	1542	4.4	134		1606	3.5	107
	2140	8.7	265		2206	10.0	305
3 F	0456	-0.2	-6	18 Sa	0504	-1.6	-49
	1139	7.0	213		1141	8.4	256
	1635	4.0	122		1705	2.7	82
	2230	9.1	277		2305	10.3	314
4 Sa	0534	-0.7	-21	19 Su	0550	-1.8	-55
	1211	7.5	229		1219	9.0	274
	1721	3.5	107		1757	1.9	58
	2315	9.5	290		2354	10.5	320
5 Su	0600	-1.2	-37	20 M	0630	-1.8	-55
	1242	8.1	247		1254	9.6	293
	1800	2.9	88		1840	1.2	37
	2357	9.9	302				
6 M	0642	-1.4	-43	21 Tu	0039	10.4	317
	1311	8.6	262		0705	-1.5	-46
	1842	2.3	70		1327	9.9	302
					1922	0.7	21
7 Tu	0034	10.0	305	22 W	0122	10.1	308
	0713	-1.5	-46		0740	-0.9	-27
	1337	9.1	277		1358	10.0	305
	1918	1.7	52		2001	0.4	12
8 W	0115	10.0	305	23 Th	0204	9.6	293
	0745	-1.3	-40		0812	-0.1	-3
	1409	9.5	290		1427	10.0	305
	2001	1.2	37		2042	0.3	9
9 Th	0155	9.7	296	24 F	0243	8.8	268
	0816	-0.9	-27		0844	0.7	21
	1437	9.8	299		1458	9.7	296
	2043	0.7	21		2120	0.5	15
10 F	0239	9.2	280	25 Sa	0325	8.0	244
	0851	-0.2	-6		0913	1.7	52
	1509	10.0	305		1528	9.4	287
	2125	0.4	12		2202	0.8	24
11 Sa	0324	8.5	259	26 Su	0410	7.2	219
	0923	0.7	21		0941	2.6	79
	1546	10.0	305		1602	9.0	274
	2217	0.3	9		2251	1.2	37
12 Su	0424	7.6	232	27 M	0506	6.4	195
	1005	1.7	52		1018	3.5	107
	1629	9.9	302		1637	8.5	259
	2316	0.2	6		2351	1.5	46
13 M	0531	6.8	207	28 Tu	0622	5.7	174
	1050	2.7	82		1102	4.2	128
	1717	9.7	296		1731	8.1	247
14 Tu	0028	0.2	6	29 W	0110	1.7	52
	0658	6.3	192		0810	5.6	171
	1153	3.6	110		1215	4.8	146
	1823	9.4	287		1841	7.8	238
15 W	0151	0.0	0	30 Th	0231	1.5	46
	0837	6.3	192		0942	6.0	183
	1320	4.1	125		1402	4.9	149
	1941	9.4	287		2006	7.9	241
				31 F	0334	0.9	27
					1028	6.7	204
					1524	4.5	137
					2115	8.3	253

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0422	0.4	12	16 Su	0445	-0.5	-15
	1103	7.3	223		1112	9.1	277
	1618	3.8	116		1702	1.9	58
	2211	8.9	271		2300	9.8	299
2 Su	0459	-0.2	-6	17 M	0526	-0.5	-15
	1131	8.1	247		1147	9.7	296
	1703	2.9	88		1745	1.0	30
	2257	9.4	287		2349	9.9	302
3 M	0536	-0.6	-18	18 Tu	0601	-0.3	-9
	1200	8.8	268		1217	10.2	311
	1742	2.0	61		1824	0.3	9
	2339	9.9	302				
4 Tu	0608	-0.8	-24	19 W	0029	9.9	302
	1226	9.5	290		0637	0.1	3
	1821	1.0	30		1246	10.4	317
					1859	-0.2	-6
5 W	0021	10.1	308	20 Th	0108	9.7	296
	0640	-0.7	-21		0706	0.7	21
	1254	10.1	308		1315	10.5	320
	1859	0.2	6		1935	-0.4	-12
6 Th	0103	10.2	311	21 F	0147	9.3	283
	0712	-0.4	-12		0737	1.3	40
	1325	10.5	320		1341	10.3	314
	1938	-0.5	-15		2010	-0.4	-12
7 F	0145	9.9	302	22 Sa	0224	8.8	268
	0745	0.1	3		0805	2.0	61
	1355	10.8	329		1409	10.1	308
	2017	-0.9	-27		2045	-0.1	-3
8 Sa	0231	9.4	287	23 Su	0301	8.2	250
	0819	0.9	27		0832	2.8	85
	1430	10.9	332		1438	9.7	296
	2104	-1.0	-30		2123	0.3	9
9 Su	0320	8.7	265	24 M	0344	7.5	229
	0858	1.8	55		0903	3.5	107
	1509	10.7	326		1507	9.2	280
	2155	-0.8	-24		2206	0.9	27
10 M	0417	7.8	238	25 Tu	0437	6.8	207
	0939	2.7	82		0938	4.2	128
	1554	10.2	311		1546	8.7	265
	2257	-0.3	-9		2301	1.4	43
11 Tu	0526	7.0	213	26 W	0548	6.3	192
	1035	3.6	110		1024	4.8	146
	1651	9.6	293		1636	8.1	247
12 W	0012	0.1	3	27 Th	0012	1.8	55
	0659	6.7	204		0727	6.2	189
	1151	4.3	131		1145	5.3	162
	1806	9.1	277		1751	7.7	235
13 Th	0135	0.2	6	28 F	0135	1.8	55
	0834	6.9	210		0850	6.6	201
	1334	4.5	137		1340	5.2	158
	1939	8.8	268		1927	7.6	232
14 F	0252	0.1	3	29 Sa	0242	1.6	49
	0944	7.6	232		0939	7.3	223
	1505	3.9	119		1500	4.4	134
	2100	9.0	274		2047	8.0	244
15 Sa	0355	-0.3	-9	30 Su	0334	1.2	37
	1033	8.4	256		1011	8.1	247
	1611	2.9	88		1556	3.4	104
	2206	9.4	287		2145	8.6	262

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0415	0.8	24	16	0455	1.3	40
M	1043	8.9	271	Tu	1107	10.4	317
	1638	2.2	67		1730	0.4	12
	2235	9.2	280		2338	9.3	283
2	0453	0.5	15	17	0529	1.6	49
Tu	1110	9.7	296	W	1137	10.7	326
	1717	1.0	30		1806	-0.2	-6
	2321	9.7	296				
3	0529	0.5	15	18	0020	9.4	287
W	1139	10.5	320	Th	0603	1.9	58
	1755	-0.2	-6		1205	10.8	329
					1837	-0.6	-18
4	0005	10.1	308	19	0056	9.3	283
Th	0604	0.6	18	F	0633	2.4	73
	1211	11.2	341		1234	10.8	329
	1834	-1.2	-37		1912	-0.7	-21
5	0049	10.2	311	20	0133	9.1	277
F	0640	1.0	30	Sa	0704	2.8	85
	1243	11.6	354		1300	10.7	326
	1916	-1.8	-55		1945	-0.7	-21
6	0135	10.0	305	21	0209	8.8	268
Sa	0716	1.5	46	Su	0733	3.3	101
	1319	11.8	360		1328	10.4	317
	2000	-2.0	-61		2017	-0.4	-12
7	0224	9.6	293	22	0246	8.4	256
Su	0756	2.1	64	M	0803	3.8	116
	1358	11.7	357		1400	10.1	308
	2047	-1.9	-58		2055	0.1	3
8	0315	9.0	274	23	0328	7.9	241
M	0840	2.9	88	Tu	0838	4.4	134
	1443	11.2	341		1432	9.6	293
	2139	-1.3	-40		2137	0.6	18
9	0415	8.3	253	24	0420	7.4	226
Tu	0928	3.7	113	W	0915	4.8	146
	1533	10.5	320		1511	9.0	274
	2242	-0.5	-15		2226	1.2	37
10	0524	7.7	235	25	0519	7.1	216
W	1034	4.4	134	Th	1007	5.3	162
	1636	9.6	293		1557	8.4	256
	2354	0.2	6		2321	1.7	52
11	0653	7.6	232	26	0631	7.2	219
Th	1203	4.7	143	F	1130	5.5	168
	1754	8.8	268		1706	7.9	241
12	0113	0.7	21	27	0030	2.0	61
F	0813	8.0	244	Sa	0740	7.5	229
	1345	4.3	131		1309	5.1	155
	1931	8.4	256		1838	7.6	232
13	0227	0.9	27	28	0136	2.1	64
Sa	0911	8.6	262	Su	0833	8.2	250
	1506	3.4	104		1426	4.2	128
	2057	8.6	262		2007	7.7	235
14	0326	0.9	27	29	0233	2.0	61
Su	0958	9.3	283	M	0911	3.9	271
	1606	2.3	70		1523	3.0	91
	2203	8.9	271		2117	8.2	250
15	0412	1.0	30	30	0322	2.0	61
M	1035	9.9	302	Tu	0945	9.8	299
	1651	1.3	40		1609	1.6	49
	2254	9.2	280		2212	8.8	268
				31	0405	2.0	61
				W	1019	10.6	323
					1651	0.2	6
					2304	9.4	287

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0449	2.0	61	16	0009	8.9	271
Th	1054	11.4	347	F	0532	3.6	110
	1733	-1.1	-34		1131	11.0	335
	2354	9.9	302		1818	-0.6	-18
2	0528	2.2	67	17	0048	9.0	274
F	1133	12.1	369	Sa	0603	3.8	116
	1815	-2.0	-61		1200	11.0	335
					1853	-0.7	-21
3	0041	10.1	308	18	0123	8.9	271
Sa	0610	2.4	73	Su	0639	4.0	122
	1212	12.5	381		1231	10.9	332
	1901	-2.5	-76		1926	-0.7	-21
4	0129	10.0	305	19	0202	8.8	268
Su	0653	2.8	85	M	0711	4.3	131
	1254	12.5	381		1303	10.7	326
	1946	-2.6	-79		2001	-0.5	-15
5	0219	9.8	299	20	0237	8.6	262
M	0739	3.2	98	Tu	0746	4.5	137
	1337	12.2	372		1336	10.4	317
	2035	-2.2	-67		2037	-0.1	-3
6	0311	9.4	287	21	0319	8.4	256
Tu	0830	3.7	113	W	0821	4.8	146
	1427	11.6	354		1411	10.0	305
	2128	-1.5	-46		2114	0.3	9
7	0410	9.0	274	22	0400	8.3	253
W	0925	4.1	125	Th	0907	5.1	155
	1522	10.7	326		1448	9.5	290
	2224	-0.6	-18		2155	0.8	24
8	0515	8.8	268	23	0447	8.2	250
Th	1039	4.5	137	F	1000	5.2	158
	1627	9.6	293		1536	8.8	268
	2330	0.3	9		2241	1.3	40
9	0625	8.8	268	24	0539	8.3	253
F	1204	4.5	137	Sa	1106	5.1	155
	1744	8.7	265		1636	8.2	250
					2329	1.8	55
10	0035	1.2	37	25	0628	8.6	262
Sa	0730	9.1	277	Su	1226	4.6	140
	1335	3.9	119		1755	7.7	235
	1915	8.1	247				
11	0141	1.8	55	26	0025	2.4	73
Su	0826	9.5	290	M	0716	9.1	277
	1448	3.0	91		1339	3.7	113
	2041	8.0	244		1922	7.5	229
12	0241	2.3	70	27	0124	2.8	85
M	0913	10.0	305	Tu	0805	9.7	296
	1545	1.9	58		1445	2.5	76
	2148	8.2	250		2044	7.7	235
13	0334	2.7	82	28	0224	3.1	94
Tu	0953	10.3	314	W	0847	10.5	320
	1633	1.0	30		1537	1.1	34
	2243	8.5	259		2151	8.3	253
14	0418	3.0	91	29	0318	3.3	101
W	1027	10.6	323	Th	0933	11.2	341
	1710	0.3	9		1626	-0.3	-9
	2331	8.7	265		2251	8.9	271
15	0456	3.3	101	30	0410	3.4	104
Th	1059	10.8	329	F	1019	11.9	363
	1747	-0.2	-6		1715	-1.4	-43
					2343	9.4	287

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0459	3.5	107	16	0042	8.6	262
Sa	1104	12.5	381	Su	0545	4.6	140
	1800	-2.3	-70		1139	10.8	329
					1840	-0.5	-15
2	0036	9.8	299	17	0118	8.8	268
Su	0551	3.5	107	M	0624	4.6	140
	1150	12.8	390		1215	10.9	332
	1849	-2.7	-82		1913	-0.7	-21
3	0125	10.0	305	18	0153	8.9	271
M	0640	3.5	107	Tu	0659	4.6	140
	1239	12.8	390		1250	10.8	329
	1937	-2.7	-82		1947	-0.6	-18
4	0213	10.0	305	19	0225	9.0	274
Tu	0732	3.6	110	W	0737	4.5	137
	1327	12.5	381		1322	10.6	323
	2025	-2.3	-70		2020	-0.4	-12
5	0304	10.0	305	20	0259	9.1	277
W	0826	3.7	113	Th	0817	4.5	137
	1417	11.8	360		1401	10.3	314
	2114	-1.6	-49		2054	-0.1	-3
6	0354	9.9	302	21	0336	9.1	277
Th	0923	3.8	116	F	0859	4.5	137
	1512	10.8	329		1438	9.8	299
	2202	-0.6	-18		2126	0.3	9
7	0447	9.8	299	22	0410	9.2	280
F	1029	3.9	119	Sa	0946	4.3	131
	1614	9.6	293		1522	9.2	280
	2255	0.5	15		2202	1.0	30
8	0542	9.8	299	23	0445	9.4	287
Sa	1143	3.8	116	Su	1041	4.1	125
	1724	8.5	259		1616	8.5	259
	2346	1.6	49		2242	1.7	52
9	0637	9.8	299	24	0527	9.6	293
Su	1300	3.3	101	M	1143	3.6	110
	1843	7.7	235		1721	7.8	238
					2325	2.5	76
10	0046	2.6	79	25	0610	9.9	302
M	0729	9.9	302	Tu	1253	2.9	88
	1413	2.7	82		1842	7.3	223
	2010	7.4	226				
11	0144	3.5	107	26	0021	3.3	101
Tu	0819	10.1	308	W	0703	10.2	311
	1515	1.9	58		1402	1.9	58
	2129	7.4	226		2013	7.2	219
12	0243	4.1	125	27	0123	3.9	119
W	0905	10.2	311	Th	0756	10.7	326
	1607	1.2	37		1508	0.8	24
	2233	7.7	235		2137	7.6	232
13	0335	4.4	134	28	0233	4.3	131
Th	0945	10.4	317	F	0852	11.2	341
	1651	0.6	18		1607	-0.4	-12
	2323	8.1	247		2243	8.2	250
14	0425	4.6	140	29	0342	4.4	134
F	1025	10.6	323	Sa	0950	11.8	360
	1728	0.1	3		1702	-1.4	-43
					2341	8.9	271
15	0005	8.4	256	30	0444	4.2	128
Sa	0506	4.7	143	Su	1046	12.3	375
	1102	10.7	326		1752	-2.2	-67
	1805	-0.3	-9				
				31	0030	9.5	290
				M	0541	3.9	119
					1141	12.6	384
					1840	-2.6	-79

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

CORDOVA, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height (ft)	Height (cm)
1 M	0414	11.7	357
	0952	3.1	94
	1542	12.2	372
	2218	-0.5	-15
2 Tu	0453	11.9	363
	1043	2.9	88
	1634	11.1	338
	2258	0.4	12
3 W	0538	12.0	366
	1141	2.6	79
	1740	9.9	302
	2343	1.5	46
4 Th	0628	12.3	375
	1243	2.2	67
	1903	9.0	274
5 F	0034	2.8	85
	0725	12.6	384
	1357	1.7	52
	2030	8.7	265
6 Sa	0133	3.9	119
	0823	13.0	396
	1517	0.9	27
	2151	9.0	274
7 Su	0250	4.7	143
	0921	13.5	411
	1627	-0.2	-6
	2305	9.7	296
8 M	0406	4.8	146
	1021	13.9	424
	1723	-1.2	-37
9 Tu	0009	10.5	320
	0513	4.4	134
	1118	14.4	439
	1812	-2.0	-61
10 W	0101	11.4	347
	0608	3.8	116
	1214	14.7	448
	1857	-2.5	-76
11 Th	0146	12.0	366
	0657	3.2	98
	1304	14.7	448
	1940	-2.6	-79
12 F	0225	12.4	378
	0744	2.8	85
	1350	14.4	439
	2020	-2.3	-70
13 Sa	0302	12.6	384
	0828	2.5	76
	1432	13.8	421
	2058	-1.7	-52
14 Su	0336	12.6	384
	0912	2.4	73
	1512	12.9	393
	2134	-0.9	-27
15 M	0411	12.3	375
	0955	2.5	76
	1552	11.7	357
	2211	0.2	6
16 Tu	0443	12.0	366
	1042	2.6	79
	1634	10.4	317
	2245	1.3	40
17 W	0517	11.7	357
	1130	2.9	88
	1723	9.2	280
	2320	2.6	79
18 Th	0557	11.4	347
	1223	3.1	94
	1829	8.1	247
	2357	3.8	116
19 F	0644	11.1	338
	1325	3.2	98
	1954	7.6	232
20 Sa	0039	5.0	152
	0740	11.0	335
	1447	3.0	91
	2119	7.5	229
21 Su	0145	5.8	177
	0837	11.2	341
	1606	2.4	73
	2238	8.0	244
22 M	0319	6.2	189
	0937	11.5	351
	1702	1.4	43
	2342	8.8	268
23 Tu	0433	5.8	177
	1033	12.1	369
	1744	0.5	15
24 W	0024	9.6	293
	0526	5.1	155
	1123	12.7	387
	1821	-0.5	-15
25 Th	0101	10.3	314
	0608	4.3	131
	1210	13.3	405
	1856	-1.3	-40
26 F	0133	11.1	338
	0647	3.4	104
	1252	13.7	418
	1928	-1.8	-55
27 Sa	0206	11.7	357
	0728	2.6	79
	1334	13.9	424
	2003	-2.1	-64
28 Su	0235	12.3	375
	0809	1.9	58
	1414	13.8	421
	2037	-2.0	-61
29 M	0307	12.7	387
	0851	1.3	40
	1453	13.2	402
	2114	-1.5	-46
30 Tu	0339	13.0	396
	0936	0.9	27
	1534	12.3	375
	2150	-0.6	-18
31 W	0411	13.1	399
	1023	0.8	24
	1623	11.2	341
	2228	0.6	18

FEBRUARY

Day	Time	Height (ft)	Height (cm)
1 Th	0453	13.1	399
	1117	0.9	27
	1722	9.9	302
	2311	2.0	61
2 F	0540	12.9	393
	1217	1.1	34
	1842	8.8	268
	2359	3.5	107
3 Sa	0639	12.6	384
	1330	1.4	43
	2018	8.3	253
4 Su	0102	4.8	146
	0754	12.5	381
	1456	1.2	37
	2151	8.7	265
5 M	0231	5.5	168
	0906	12.6	384
	1617	0.5	15
	2308	9.5	290
6 Tu	0404	5.3	162
	1017	12.9	393
	1718	-0.5	-15
7 W	0006	10.5	320
	0513	4.4	134
	1121	13.4	408
	1806	-1.2	-37
8 Th	0051	11.4	347
	0606	3.3	101
	1214	13.8	421
	1846	-1.7	-52
9 F	0128	12.1	369
	0651	2.4	73
	1259	13.9	424
	1923	-1.9	-58
10 Sa	0200	12.6	384
	0731	1.6	49
	1341	13.7	418
	1958	-1.7	-52
11 Su	0231	12.8	390
	0810	1.2	37
	1418	13.2	402
	2030	-1.2	-37
12 M	0257	12.9	393
	0848	1.0	30
	1454	12.5	381
	2102	-0.4	-12
13 Tu	0323	12.7	387
	0927	1.0	30
	1528	11.5	351
	2133	0.6	18
14 W	0350	12.5	381
	1005	1.3	40
	1603	10.5	320
	2203	1.7	52
15 Th	0416	12.1	369
	1045	1.7	52
	1640	9.4	287
	2233	2.9	88
16 F	0448	11.7	357
	1130	2.3	70
	1733	8.3	253
	2305	4.1	125
17 Sa	0525	11.1	338
	1222	2.9	88
	1855	7.5	229
	2343	5.2	158
18 Su	0625	10.7	326
	1335	3.2	98
	2037	7.3	223
19 M	0042	6.1	186
	0749	10.5	320
	1514	3.0	91
	2207	7.8	238
20 Tu	0229	6.5	198
	0904	10.8	329
	1633	2.0	61
	2313	8.6	262
21 W	0407	5.9	180
	1010	11.4	347
	1718	0.9	27
	2351	9.5	290
22 Th	0507	4.7	143
	1106	12.2	372
	1755	-0.2	-6
23 F	0027	10.5	320
	0551	3.4	104
	1152	12.9	393
	1829	-1.1	-34
24 Sa	0058	11.5	351
	0630	2.0	61
	1237	13.5	411
	1901	-1.7	-52
25 Su	0127	12.4	378
	0709	0.8	24
	1319	13.8	421
	1935	-1.9	-58
26 M	0159	13.2	402
	0750	-0.2	-6
	1401	13.7	418
	2010	-1.7	-52
27 Tu	0230	13.8	421
	0833	-0.9	-27
	1443	13.2	402
	2045	-1.0	-30
28 W	0302	14.1	430
	0915	-1.1	-34
	1528	12.3	375
	2123	0.1	3

MARCH

Day	Time	Height (ft)	Height (cm)
1 Th	0336	14.2	433
	1004	-0.9	-27
	1616	11.1	338
	2202	1.4	43
2 F	0416	13.8	421
	1056	-0.4	-12
	1712	9.9	302
	2248	2.9	88
3 Sa	0501	13.1	399
	1155	0.5	15
	1836	8.8	268
	2340	4.3	131
4 Su	0609	12.3	375
	1308	1.3	40
	2017	8.5	259
5 M	0050	5.4	165
	0738	11.7	357
	1437	1.5	46
	2146	9.0	274
6 Tu	0230	5.7	174
	0903	11.7	357
	1606	1.0	30
	2252	9.9	302
7 W	0409	4.9	149
	1017	12.0	366
	1705	0.3	9
	2344	10.8	329
8 Th	0513	3.6	110
	1116	12.4	378
	1748	-0.4	-12
9 F	0023	11.6	354
	0558	2.3	70
	1208	12.7	387
	1824	-0.8	-24
10 Sa	0055	12.2	372
	0637	1.2	37
	1251	12.8	390
	1859	-0.9	-27
11 Su	0126	12.7	387
	0714	0.4	12
	1327	12.7	387
	1928	-0.6	-18
12 M	0152	12.9	393
	0748	-0.1	-3
	1402	12.4	378
	1958	-0.1	-3
13 Tu	0217	13.0	396
	0822	-0.2	-6
	1434	11.9	363
	2028	0.6	18
14 W	0239	13.0	396
	0855	-0.1	-3
	1505	11.2	341
	2057	1.6	49
15 Th	0303	12.7	387
	0930	0.2	6
	1539	10.5	320
	2126	2.6	79
16 F	0328	12.4	378
	1008	0.8	24
	1616	9.6	293
	2155	3.6	110
17 Sa	0354	11.9	363
	1050	1.6	49
	1703	8.6	262
	2229	4.5	137
18 Su	0429	11.2	341
	1138	2.3	70
	1818	7.8	238
	2311	5.4	165
19 M	0522	10.5	320
	1242	2.9	88
	1959	7.6	232
20 Tu	0013	6.1	186
	0659	10.0	305
	1409	3.0	91
	2124	8.0	244
21 W	0156	6.2	189
	0833	10.2	311
	1537	2.3	70
	2220	8.8	268
22 Th	0337	5.4	165
	0945	10.8	329
	1634	1.3	40
	2302	9.8	299
23 F	0441	3.9	119
	1040	11.6	354
	1715	0.3	9
	2337	10.9	332
24 Sa	0526	2.1	64
	1129	12.3	375
	1752	-0.5	-15
25 Su	0012	12.1	369
	0608	0.5	15
	1219	12.9	393
	1827	-0.9	-27
26 M	0045	13.2	402
	0648	-1.0	-30
	1305	13.2	402
	1903	-1.0	-30
27 Tu	0119	14.1	430
	0729	-2.1	-64
	1348	13.2	402
	1941	-0.5	-15
28 W	0154	14.7	448
	0813	-2.7	-82
	1433	12.8	390
	2019	0.2	6
29 Th	0229	14.9	454
	0858	-2.6	-79
	1519	12.1	369
	2059	1.3	40
30 F	0306	14.7	448
	0947	-2.1	-64
	1611	11.1	338
	2144	2.5	76
31 Sa	0350	14.0	427
	1039	-1.1	-34
	1712	10.1	308
	2235	3.7	113

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

CORDOVA, ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0441	12.9	393	16 M	0355	11.2	341
	1138	0.1	3		1111	1.5	46
	1836	9.3	283		1757	8.3	253
	2333	4.7	143		2301	5.4	165
2 M	0554	11.7	357	17 Tu	0448	10.4	317
	1247	1.1	34		1207	2.0	61
	2008	9.2	280		1922	8.2	250
3 Tu	0052	5.4	165	18 W	0004	5.7	174
	0730	10.9	332		0621	9.7	296
	1410	1.6	49		1316	2.3	70
	2121	9.7	296		2034	8.7	265
4 W	0235	5.2	158	19 Th	0131	5.5	168
	0857	10.8	329		0758	9.7	296
	1535	1.5	46		1430	2.1	64
	2220	10.5	320		2124	9.5	290
5 Th	0406	4.0	122	20 F	0259	4.4	134
	1006	11.0	335		0912	10.1	308
	1634	1.1	34		1535	1.6	49
	2305	11.2	341		2206	10.5	320
6 F	0502	2.6	79	21 Sa	0406	2.8	85
	1105	11.3	344		1012	10.7	326
	1718	0.7	21		1627	1.0	30
	2344	11.8	360		2246	11.6	354
7 Sa	0542	1.3	40	22 Su	0459	0.9	27
	1152	11.5	351		1105	11.3	344
	1755	0.5	15		1710	0.6	18
					2323	12.8	390
8 Su	0015	12.3	375	23 M	0545	-0.9	-27
	0620	0.3	9		1200	11.8	360
	1234	11.6	354		1752	0.4	12
	1824	0.6	18				
9 M	0042	12.6	384	24 Tu	0001	13.9	424
	0653	-0.5	-15		0627	-2.4	-73
	1311	11.5	351		1250	12.2	372
	1856	0.9	27		1831	0.5	15
10 Tu	0106	12.9	393	25 W	0040	14.7	448
	0724	-0.9	-27		0710	-3.3	-101
	1345	11.4	347		1339	12.4	378
	1925	1.4	43		1912	0.9	27
11 W	0132	13.0	396	26 Th	0120	15.2	463
	0757	-1.0	-30		0755	-3.7	-113
	1417	11.2	341		1427	12.2	372
	1956	2.0	61		1955	1.5	46
12 Th	0157	13.0	396	27 F	0202	15.2	463
	0829	-0.8	-24		0841	-3.4	-104
	1449	10.8	329		1517	11.8	360
	2025	2.7	82		2041	2.3	70
13 F	0224	12.8	390	28 Sa	0245	14.7	448
	0904	-0.4	-12		0933	-2.6	-79
	1525	10.3	314		1611	11.1	338
	2057	3.5	107		2131	3.1	94
14 Sa	0249	12.4	378	29 Su	0334	13.8	421
	0942	0.2	6		1025	-1.5	-46
	1603	9.6	293		1712	10.5	320
	2131	4.2	128		2227	3.9	119
15 Su	0323	11.9	363	30 M	0432	12.5	381
	1024	0.9	27		1122	-0.4	-12
	1648	8.9	271		1823	10.1	308
	2211	4.9	149		2333	4.5	137

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0545	11.2	341	16 W	0435	10.4	317
	1225	0.7	21		1140	0.9	27
	1939	10.1	308		1844	9.2	280
					2354	4.8	146
2 W	0047	4.7	143	17 Th	0551	9.6	293
	0714	10.3	314		1232	1.3	40
	1332	1.5	46		1939	9.6	293
	2042	10.4	317				
3 Th	0217	4.2	128	18 F	0103	4.3	131
	0834	9.9	302		0721	9.3	283
	1442	1.9	58		1329	1.6	49
	2133	10.9	332		2031	10.3	314
4 F	0340	3.2	98	19 Sa	0221	3.2	98
	0943	9.8	299		0837	9.3	283
	1545	2.0	61		1432	1.8	55
	2217	11.4	347		2114	11.3	344
5 Sa	0439	1.9	58	20 Su	0332	1.7	52
	1041	9.9	302		0943	9.7	296
	1634	2.0	61		1532	1.9	58
	2254	11.8	360		2156	12.3	375
6 Su	0521	0.7	21	21 M	0430	0.0	0
	1131	10.0	305		1044	10.2	311
	1715	2.1	64		1626	1.9	58
	2326	12.2	372		2241	13.4	408
7 M	0556	-0.2	-6	22 Tu	0521	-1.7	-52
	1218	10.2	311		1144	10.7	326
	1750	2.2	67		1715	2.0	61
	2355	12.5	381		2323	14.3	436
8 Tu	0628	-0.8	-24	23 W	0609	-2.9	-88
	1254	10.4	317		1240	11.2	341
	1824	2.5	76		1804	2.0	61
9 W	0024	12.7	387	24 Th	0010	14.9	454
	0703	-1.2	-37		0655	-3.7	-113
	1331	10.5	320		1333	11.6	354
	1856	2.8	85		1851	2.2	67
10 Th	0054	12.8	390	25 F	0056	15.2	463
	0735	-1.3	-40		0742	-3.9	-119
	1406	10.5	320		1423	11.7	357
	1928	3.2	98		1939	2.4	73
11 F	0126	12.8	390	26 Sa	0145	15.0	457
	0809	-1.2	-37		0829	-3.6	-110
	1440	10.4	317		1513	11.7	357
	2002	3.6	110		2028	2.8	85
12 Sa	0158	12.7	387	27 Su	0233	14.4	439
	0845	-0.8	-24		0918	-2.8	-85
	1518	10.1	308		1603	11.4	347
	2037	4.1	125		2123	3.1	94
13 Su	0230	12.4	378	28 M	0326	13.4	408
	0923	-0.4	-12		1010	-1.9	-58
	1557	9.7	296		1658	11.1	338
	2115	4.4	134		2219	3.4	104
14 M	0304	11.9	363	29 Tu	0424	12.2	372
	1005	0.1	3		1101	-0.8	-24
	1645	9.3	283		1757	10.8	329
	2200	4.7	143		2322	3.6	110
15 Tu	0343	11.2	341	30 W	0527	10.8	329
	1049	0.5	15		1152	0.3	9
	1741	9.1	277		1854	10.8	329
	2253	4.9	149				
				31 Th	0028	3.6	110
					0642	9.7	296
					1247	1.3	40
					1951	10.8	329

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0143	3.3	101	16 Sa	0037	2.9	88
	0758	9.0	274		0646	9.0	274
	1343	2.2	67		1241	1.5	46
	2039	11.0	335		1935	11.2	341
2 Sa	0301	2.6	79	17 Su	0146	2.1	64
	0907	8.6	262		0806	8.7	265
	1443	2.9	88		1337	2.3	70
	2121	11.3	344		2026	12.0	366
3 Su	0401	1.7	52	18 M	0300	1.0	30
	1009	8.6	262		0921	8.8	268
	1541	3.3	101		1442	3.0	91
	2201	11.6	354		2116	12.8	390
4 M	0452	0.8	24	19 Tu	0406	-0.4	-12
	1107	8.8	268		1030	9.2	280
	1630	3.6	110		1548	3.3	101
	2236	11.9	363		2206	13.5	411
5 Tu	0532	0.0	0	20 W	0505	-1.7	-52
	1158	9.1	277		1134	9.9	302
	1715	3.8	116		1651	3.3	101
	2313	12.2	372		2259	14.2	433
6 W	0608	-0.6	-18	21 Th	0555	-2.7	-82
	1242	9.5	290		1235	10.5	320
	1755	3.8	116		1747	3.1	94
	2350	12.4	378		2352	14.6	445
7 Th	0643	-1.0	-30	22 F	0645	-3.4	-104
	1322	9.8	299		1329	11.2	341
	1829	3.9	119		1838	2.8	85
8 F	0029	12.6	384	23 Sa	0046	14.8	451
	0718	-1.3	-40		0730	-3.6	-110
	1358	10.1	308		1417	11.6	354
	1908	3.9	119		1930	2.6	79
9 Sa	0104	12.7	387	24 Su	0138	14.6	445
	0752	-1.3	-40		0817	-3.3	-101
	1433	10.2	311		1502	11.8	360
	1944	3.9	119		2020	2.4	73
10 Su	0142	12.7	387	25 M	0227	14.1	430
	0829	-1.3	-40		0902	-2.8	-85
	1510	10.2	311		1547	11.9	363
	2022	3.9	119		2110	2.4	73
11 M	0217	12.4	378	26 Tu	0316	13.2	402
	0907	-1.1	-34		0949	-2.0	-61
	1547	10.2	311		1630	11.7	357
	2105	3.9	119		2203	2.5	76
12 Tu	0256	12.0	366	27 W	0405	12.0	366
	0946	-0.8	-24		1031	-0.9	-27
	1627	10.1	308		1712	11.5	351
	2150	3.9	119		2258	2.6	79
13 W	0339	11.4	347	28 Th	0458	10.6	323
	1027	-0.5	-15		1113	0.2	6
	1709	10.1	308		1801	11.3	344
	2240	3.7	113		2354	2.7	82
14 Th	0427	10.6	323	29 F	0559	9.3	283
	1108	0.0	0		1156	1.5	46
	1754	10.3	314		1850	11.1	338
	2335	3.4	104				
15 F	0528	9.7	296	30 Sa	0055	2.7	82
	1151	0.7	21		0709	8.3	253
	1846	10.6	323		1242	2.7	82
					1936	11.0	335

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

CORDOVA, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height (ft)	Height (cm)
1 Su	0201	2.5	76
	0823	7.8	238
	1334	3.7	113
	2023	11.0	335
2 M	0316	2.0	61
	0935	7.7	235
	1436	4.5	137
	2108	11.2	341
3 Tu	0419	1.4	43
	1042	8.0	244
	1545	4.9	149
	2153	11.4	347
4 W	0507	0.6	18
	1142	8.5	259
	1644	4.9	149
	2241	11.8	360
5 Th	0550	0.0	0
	1229	9.0	274
	1731	4.6	140
	2327	12.2	372
6 F	0627	-0.6	-18
	1310	9.6	293
	1812	4.2	128
7 Sa	0009	12.5	381
	0701	-1.1	-34
	1344	10.1	308
	1851	3.8	116
8 Su	0051	12.8	390
	0736	-1.5	-46
	1418	10.5	320
	1930	3.4	104
9 M	0133	12.9	393
	0811	-1.7	-52
	1451	10.8	329
	2009	3.1	94
10 Tu	0212	12.8	390
	0847	-1.7	-52
	1523	11.0	335
	2051	2.7	82
11 W	0247	12.4	378
	0922	-1.4	-43
	1555	11.2	341
	2134	2.4	73
12 Th	0329	11.7	357
	0958	-0.9	-27
	1629	11.3	344
	2221	2.1	64
13 F	0411	10.8	329
	1035	-0.2	-6
	1708	11.5	351
	2311	1.9	58
14 Sa	0508	9.8	299
	1116	0.8	24
	1751	11.7	357
15 Su	0010	1.6	49
	0620	8.8	268
	1202	2.0	61
	1843	11.9	363
16 M	0115	1.3	40
	0743	8.3	253
	1254	3.2	98
	1943	12.3	375
17 Tu	0231	0.8	24
	0907	8.3	253
	1403	4.1	125
	2045	12.7	387
18 W	0348	0.0	0
	1025	8.8	268
	1525	4.5	137
	2147	13.2	402
19 Th	0451	-1.0	-30
	1134	9.7	296
	1639	4.2	128
	2246	13.7	418
20 F	0547	-2.0	-61
	1231	10.5	320
	1740	3.5	107
	2345	14.1	430
21 Sa	0635	-2.6	-79
	1320	11.3	344
	1832	2.7	82
22 Su	0041	14.4	439
	0719	-2.9	-88
	1401	11.9	363
	1920	2.0	61
23 M	0131	14.3	436
	0759	-2.8	-85
	1441	12.3	375
	2006	1.6	49
24 Tu	0219	13.8	421
	0841	-2.3	-70
	1515	12.4	378
	2053	1.3	40
25 W	0301	13.0	396
	0918	-1.5	-46
	1550	12.3	375
	2139	1.3	40
26 Th	0343	11.8	360
	0955	-0.5	-15
	1623	12.1	369
	2225	1.5	46
27 F	0424	10.6	323
	1032	0.8	24
	1701	11.7	357
	2311	1.9	58
28 Sa	0514	9.3	283
	1109	2.1	64
	1741	11.3	344
29 Su	0003	2.2	67
	0616	8.2	250
	1146	3.4	104
	1824	10.9	332
30 M	0102	2.6	79
	0734	7.5	229
	1230	4.6	140
	1920	10.7	326
31 Tu	0218	2.7	82
	0900	7.4	226
	1332	5.5	168
	2021	10.7	326

AUGUST

Day	Time	Height (ft)	Height (cm)
1 W	0340	2.3	70
	1020	7.8	238
	1458	5.9	180
	2121	10.9	332
2 Th	0445	1.6	49
	1121	8.4	256
	1617	5.6	171
	2217	11.4	347
3 F	0531	0.7	21
	1207	9.1	277
	1715	4.9	149
	2309	12.0	366
4 Sa	0608	-0.1	-3
	1243	9.8	299
	1758	4.0	122
	2355	12.6	384
5 Su	0640	-0.9	-27
	1315	10.5	320
	1837	3.1	94
6 M	0039	13.0	396
	0712	-1.4	-43
	1346	11.2	341
	1914	2.3	70
7 Tu	0118	13.2	402
	0745	-1.7	-52
	1415	11.7	357
	1951	1.6	49
8 W	0157	13.2	402
	0819	-1.7	-52
	1446	12.2	372
	2031	1.0	30
9 Th	0236	12.8	390
	0851	-1.3	-40
	1515	12.5	381
	2113	0.6	18
10 F	0315	12.1	369
	0926	-0.5	-15
	1547	12.7	387
	2159	0.5	15
11 Sa	0400	11.1	338
	1003	0.5	15
	1623	12.8	390
	2248	0.5	15
12 Su	0452	10.0	305
	1045	1.8	55
	1704	12.7	387
	2343	0.8	24
13 M	0604	8.9	271
	1132	3.1	94
	1759	12.4	378
14 Tu	0050	1.1	34
	0735	8.4	256
	1228	4.4	134
	1911	12.2	372
15 W	0209	1.2	37
	0908	8.5	259
	1347	5.2	158
	2030	12.3	375
16 Th	0335	0.7	21
	1024	9.2	280
	1521	5.2	158
	2143	12.7	387
17 F	0444	-0.2	-6
	1127	10.2	311
	1641	4.3	131
	2249	13.2	402
18 Sa	0537	-1.0	-30
	1216	11.1	338
	1738	3.1	94
	2347	13.7	418
19 Su	0621	-1.7	-52
	1257	11.9	363
	1825	1.9	58
20 M	0036	13.9	424
	0659	-1.9	-58
	1333	12.5	381
	1909	1.1	34
21 Tu	0121	13.8	421
	0735	-1.8	-55
	1405	12.9	393
	1949	0.5	15
22 W	0203	13.4	408
	0810	-1.3	-40
	1437	13.0	396
	2028	0.3	9
23 Th	0241	12.7	387
	0844	-0.4	-12
	1505	12.9	393
	2109	0.3	9
24 F	0317	11.7	357
	0918	0.7	21
	1532	12.6	384
	2149	0.7	21
25 Sa	0355	10.7	326
	0950	1.9	58
	1600	12.2	372
	2231	1.3	40
26 Su	0435	9.6	293
	1023	3.2	98
	1632	11.6	354
	2314	2.0	61
27 M	0528	8.6	262
	1058	4.3	131
	1711	11.0	335
28 Tu	0009	2.7	82
	0648	7.8	238
	1141	5.4	165
	1810	10.5	320
29 W	0118	3.2	98
	0827	7.6	232
	1239	6.2	189
	1939	10.2	311
30 Th	0251	3.2	98
	0951	8.1	247
	1423	6.5	198
	2055	10.5	320
31 F	0414	2.4	73
	1049	8.8	268
	1601	5.8	177
	2157	11.1	338

SEPTEMBER

Day	Time	Height (ft)	Height (cm)
1 Sa	0502	1.4	43
	1131	9.6	293
	1654	4.6	140
	2249	11.9	363
2 Su	0536	0.4	12
	1203	10.5	320
	1736	3.3	101
	2338	12.5	381
3 M	0611	-0.4	-12
	1235	11.4	347
	1815	2.1	64
4 Tu	0020	13.1	399
	0643	-0.9	-27
	1304	12.2	372
	1851	0.9	27
5 W	0102	13.4	408
	0713	-1.1	-34
	1334	13.0	396
	1929	-0.1	-3
6 Th	0141	13.4	408
	0746	-0.9	-27
	1404	13.6	415
	2009	-0.8	-24
7 F	0222	13.0	396
	0820	-0.3	-9
	1434	14.0	427
	2049	-1.1	-34
8 Sa	0305	12.4	378
	0857	0.6	18
	1509	14.1	430
	2136	-0.9	-27
9 Su	0349	11.4	347
	0936	1.8	55
	1544	13.9	424
	2226	-0.4	-12
10 M	0445	10.3	314
	1021	3.1	94
	1627	13.3	405
	2322	0.4	12
11 Tu	0601	9.3	283
	1113	4.4	134
	1730	12.5	381
12 W	0031	1.2	37
	0737	8.9	271
	1219	5.4	165
	1858	11.8	360
13 Th	0153	1.6	49
	0907	9.4	287
	1352	5.7	174
	2031	11.7	357
14 F	0321	1.4	43
	1015	10.2	311
	1532	5.1	155
	2145	12.1	369
15 Sa	0430	0.7	21
	1107	11.1	338
	1642	3.7	113
	2249	12.6	384
16 Su	0518	0.0	0
	1150	12.0	366
	1732	2.2	67
	2342	13.0	396
17 M	0558	-0.4	-12
	1225	12.7	387
	1814	1.0	30
18 Tu	0027	13.1	399
	0633	-0.5	-15
	1257	13.2	402
	1853	0.1	3
19 W	0109	13.1	399
	0707	-0.2	-6
	1325	13.5	411
	1928	-0.4	-12
20 Th	0146	12.7	387
	0739	0.4	12
	1353	13.5	411
	2003	-0.6	-18
21 F	0220	12.2	372
	0809	1.2	37
	1418	13.4	408
	2040	-0.3	-9
22 Sa	0256	11.6	354
	0840	2.2	67
	1443	13.1	399
	2114	0.1	3
23 Su	0328	10.8	329
	0912	3.2	98
	1510	12.7	387
	2152	0.9	27
24 M	0408	10.0	305
	0944	4.3	131
	1536	12.0	366
	2235	1.7	52
25 Tu	0453	9.1	277
	1019	5.2	158
	1611	11.3	344
	2325	2.6	79
26 W	0613	8.4	256
	1108	6.0	183
	1704	10.5	320
27 Th	0028	3.2	98
	0749	8.2	250
	1214	6.6	201
	1850	9.9	302
28 F	0148	3.4	104
	0908	8.7	265
	1351	6.6	201
	2022	10.1	308
29 Sa	0319	2.9	88
	1000	9.4	287
	1529	5.6	171
	2132	10.7	326
30 Su	0414	2.1	64
	1039	10.3	314
	1628	4.1	125
	2225	11.4	347

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0455	1.2	37	16 Tu	0528	1.2	37
	1114	11.3	344		1147	13.2	402
	1710	2.5	76		1800	0.3	9
	2313	12.1	369				
2 Tu	0532	0.5	15	17 W	0014	12.1	369
	1146	12.4	378		0600	1.3	40
	1750	0.9	27		1217	13.5	411
	2358	12.7	387		1833	-0.5	-15
3 W	0604	0.1	3	18 Th	0056	12.1	369
	1218	13.4	408		0635	1.6	49
	1827	-0.6	-18		1245	13.7	418
					1906	-0.9	-27
4 Th	0043	13.1	399	19 F	0131	12.0	366
	0639	0.1	3		0707	2.2	67
	1251	14.3	436		1312	13.8	421
	1906	-1.6	-49		1941	-0.9	-27
5 F	0127	13.2	402	20 Sa	0205	11.7	357
	0714	0.4	12		0739	2.8	85
	1324	14.9	454		1337	13.6	415
	1948	-2.3	-70		2013	-0.7	-21
6 Sa	0209	13.0	396	21 Su	0239	11.4	347
	0751	1.1	34		0809	3.6	110
	1359	15.2	463		1404	13.4	408
	2030	-2.3	-70		2048	-0.2	-6
7 Su	0255	12.4	378	22 M	0314	10.9	332
	0832	2.0	61		0843	4.3	131
	1438	15.1	460		1433	12.9	393
	2119	-1.9	-58		2126	0.5	15
8 M	0344	11.7	357	23 Tu	0352	10.3	314
	0915	3.1	94		0918	5.1	155
	1518	14.5	442		1504	12.3	375
	2208	-1.0	-30		2207	1.3	40
9 Tu	0443	10.8	329	24 W	0435	9.6	293
	1008	4.1	125		0958	5.7	174
	1608	13.5	411		1539	11.6	354
	2306	0.1	3		2253	2.1	64
10 W	0602	10.1	308	25 Th	0546	9.1	277
	1106	5.1	155		1047	6.2	189
	1714	12.3	375		1624	10.7	326
					2349	2.6	79
11 Th	0013	1.1	34	26 F	0709	9.0	274
	0729	9.9	302		1154	6.4	195
	1222	5.7	174		1757	9.9	302
	1853	11.4	347				
12 F	0129	1.8	55	27 Sa	0053	3.0	91
	0847	10.4	317		0815	9.4	287
	1357	5.5	168		1318	6.1	186
	2026	11.2	341		1940	9.7	296
13 Sa	0253	1.9	58	28 Su	0203	2.9	88
	0946	11.2	341		0904	10.1	308
	1529	4.4	134		1446	5.1	155
	2138	11.4	347		2053	10.1	308
14 Su	0401	1.6	49	29 M	0308	2.6	79
	1033	12.0	366		0945	11.1	338
	1634	2.9	88		1553	3.5	107
	2241	11.7	357		2153	10.6	323
15 M	0449	1.3	40	30 Tu	0400	2.2	67
	1113	12.6	384		1022	12.2	372
	1721	1.5	46		1641	1.7	52
	2331	11.9	363		2246	11.3	344
				31 W	0444	1.8	55
					1057	13.3	405
					1723	-0.1	-3
					2337	11.9	363

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0526	1.6	49	16 F	0045	11.0	335
	1134	14.3	436		0606	3.4	104
	1805	-1.6	-49		1208	13.6	415
					1847	-0.9	-27
2 F	0027	12.4	378	17 Sa	0122	11.2	341
	0606	1.7	52		0640	3.7	113
	1211	15.2	463		1237	13.6	415
	1847	-2.6	-79		1921	-0.9	-27
3 Sa	0114	12.6	384	18 Su	0157	11.2	341
	0648	1.9	58		0714	4.1	125
	1253	15.7	479		1309	13.6	415
	1931	-3.1	-94		1954	-0.8	-24
4 Su	0203	12.7	387	19 M	0230	11.1	338
	0728	2.4	73		0749	4.5	137
	1332	15.9	485		1341	13.4	408
	2016	-3.0	-91		2029	-0.4	-12
5 M	0251	12.4	378	20 Tu	0305	10.9	332
	0814	3.0	91		0824	4.8	146
	1418	15.5	472		1413	13.0	396
	2105	-2.4	-73		2107	0.0	0
6 Tu	0342	11.9	363	21 W	0344	10.6	323
	0905	3.7	113		0902	5.2	158
	1504	14.7	448		1449	12.5	381
	2155	-1.5	-46		2147	0.6	18
7 W	0441	11.4	347	22 Th	0426	10.2	311
	0958	4.4	134		0946	5.4	165
	1600	13.5	411		1526	11.8	360
	2251	-0.3	-9		2229	1.1	34
8 Th	0549	11.0	335	23 F	0517	9.9	302
	1103	4.9	149		1037	5.6	171
	1709	12.1	369		1612	10.9	332
	2351	0.8	24		2315	1.6	49
9 F	0703	11.0	335	24 Sa	0615	9.9	302
	1216	5.1	155		1133	5.5	168
	1834	11.0	335		1718	10.0	305
10 Sa	0055	1.7	52	25 Su	0004	2.1	64
	0809	11.3	344		0713	10.2	311
	1344	4.7	143		1241	5.1	155
	2004	10.5	320		1851	9.4	287
11 Su	0206	2.3	70	26 M	0057	2.5	76
	0903	11.8	360		0805	10.8	329
	1511	3.6	110		1356	4.2	128
	2117	10.3	314		2010	9.3	283
12 M	0311	2.7	82	27 Tu	0158	2.9	88
	0949	12.4	378		0847	11.7	357
	1614	2.3	70		1508	2.8	85
	2220	10.4	317		2119	9.6	293
13 Tu	0407	2.8	85	28 W	0300	3.1	94
	1030	12.8	390		0932	12.7	387
	1701	1.1	34		1608	1.1	34
	2315	10.6	323		2222	10.2	311
14 W	0452	2.9	88	29 Th	0357	3.2	98
	1103	13.2	402		1014	13.7	418
	1740	0.1	3		1700	-0.5	-15
					2321	10.8	329
15 Th	0003	10.8	329	30 F	0451	3.2	98
	0531	3.1	94		1057	14.7	448
	1136	13.4	408		1747	-2.0	-61
	1815	-0.5	-15				

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0016	11.5	351	16 Su	0117	10.5	320
	0539	3.1	94		0621	4.7	143
	1143	15.4	469		1216	13.2	402
	1833	-2.9	-88		1907	-0.8	-24
2 Su	0109	12.0	366	17 M	0151	10.8	329
	0627	3.1	94		0658	4.6	140
	1229	15.9	485		1253	13.4	408
	1917	-3.4	-104		1941	-0.9	-27
3 M	0159	12.3	375	18 Tu	0225	11.0	335
	0714	3.1	94		0733	4.5	137
	1318	15.9	485		1329	13.3	405
	2005	-3.3	-101		2016	-0.8	-24
4 Tu	0248	12.5	381	19 W	0256	11.1	338
	0804	3.2	98		0812	4.4	134
	1409	15.5	472		1407	13.1	399
	2053	-2.8	-85		2051	-0.7	-21
5 W	0334	12.4	378	20 Th	0331	11.0	335
	0856	3.4	104		0851	4.4	134
	1459	14.7	448		1443	12.7	387
	2141	-1.9	-58		2127	-0.4	-12
6 Th	0427	12.2	372	21 F	0403	11.0	335
	0952	3.7	113		0933	4.3	131
	1554	13.4	408		1518	12.0	366
	2232	-0.8	-24		2203	0.0	0
7 F	0521	11.9	363	22 Sa	0442	10.9	332
	1052	3.8	116		1019	4.2	128
	1653	12.0	366		1600	11.2	341
	2322	0.3	9		2243	0.6	18
8 Sa	0620	11.8	360	23 Su	0525	11.0	335
	1156	3.9	119		1109	4.0	122
	1805	10.6	323		1650	10.2	311
					2321	1.3	40
9 Su	0014	1.5	46	24 M	0610	11.2	341
	0719	11.8	360		1205	3.6	110
	1308	3.7	113		1805	9.3	283
	1928	9.6	293				
10 M	0109	2.7	82	25 Tu	0007	2.2	67
	0810	12.0	366		0658	11.6	354
	1427	3.1	94		1311	3.0	91
	2045	9.1	277		1929	8.7	265
11 Tu	0209	3.6	110	26 W	0057	3.1	94
	0858	12.2	372		0753	12.1	369
	1543	2.3	70		1423	2.2	67
	2156	9.1	277		2049	8.7	265
12 W	0314	4.2	128	27 Th	0201	3.9	119
	0940	12.4	378		0843	12.9	393
	1638	1.3	40		1536	0.9	27
	2257	9.3	283		2204	9.2	280
13 Th	0413	4.6	140	28 F	0314	4.4	134
	1021	12.6	384		0937	13.6	415
	1721	0.5	15		1641	-0.5	-15
	2352	9.7	296		2313	9.9	302
14 F	0502	4.7	143	29 Sa	0422	4.4	134
	1059	12.8	390		1033	14.4	439
	1758	-0.1	-3		1734	-1.7	-52
15 Sa	0039	10.1	308	30 Su	0013	10.8	329
	0544	4.7	143		0523	4.0	122
	1137	13.1	399		1126	15.0	457
	1833	-0.5	-15		1823	-2.7	-82
				31 M	0105	11.6	354
					0616	3.5	107
					1221	15.5	472
					1909	-3.2	-98

Time meridian 135° W, 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

VALDEZ, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0403	11.2	341	16 Tu	0438	11.5	351
	0943	3.1	94		1037	2.5	76
	1527	11.8	360		1630	10.0	305
	2207	-0.5	-15		2242	1.4	43
2 Tu	0438	11.4	347	17 W	0513	11.2	341
	1036	2.8	85		1126	2.8	85
	1615	10.7	326		1723	8.8	268
	2249	0.4	12		2317	2.6	79
3 W	0523	11.5	351	18 Th	0555	10.9	332
	1131	2.6	79		1218	3.0	91
	1720	9.5	290		1335	7.8	238
	2331	1.6	49		2352	3.8	116
4 Th	0613	11.7	357	19 F	0643	10.6	323
	1235	2.2	67		1327	3.1	94
	1851	8.5	259		2003	7.3	223
5 F	0023	2.8	85	20 Sa	0039	4.9	149
	0710	11.9	363		0740	10.5	320
	1351	1.7	52		1453	2.8	85
	2022	8.2	250		2125	7.3	223
6 Sa	0125	3.8	116	21 Su	0150	5.7	174
	0813	12.2	372		0839	10.6	323
	1515	0.8	24		1610	2.1	64
	2146	8.3	253		2245	7.8	238
7 Su	0246	4.4	134	22 M	0322	5.9	180
	0915	12.5	381		0936	10.9	332
	1626	-0.4	-12		1701	1.1	34
	2304	8.9	271		2340	8.4	256
8 M	0405	4.4	134	23 Tu	0434	5.4	165
	1016	13.0	396		1031	11.4	347
	1724	-1.5	-46		1743	0.2	6
9 Tu	0007	9.7	296	24 W	0022	9.0	274
	0511	3.9	119		0524	4.8	146
	1115	13.4	408		1116	11.9	363
	1813	-2.3	-70		1817	-0.7	-21
10 W	0057	10.4	317	25 Th	0057	9.7	296
	0605	3.3	101		0607	4.0	122
	1209	13.7	418		1159	12.5	381
	1857	-2.8	-85		1850	-1.5	46
11 Th	0142	11.0	335	26 F	0129	10.4	317
	0654	2.7	82		0644	3.2	98
	1259	13.8	421		1241	13.0	396
	1939	-2.9	-88		1924	-1.9	-58
12 F	0220	11.4	347	27 Sa	0157	11.0	335
	0740	2.3	70		0723	2.5	76
	1345	13.5	411		1319	13.2	402
	2018	-2.6	-79		1956	-2.1	-64
13 Sa	0257	11.7	357	28 Su	0227	11.6	354
	0825	2.1	64		0802	1.9	58
	1427	13.0	396		1359	13.1	399
	2057	-1.9	-58		2031	-1.9	-58
14 Su	0330	11.8	360	29 M	0255	12.1	369
	0911	2.1	64		0843	1.4	43
	1506	12.2	372		1438	12.6	384
	2137	-1.0	-30		2106	-1.4	-43
15 M	0406	11.7	357	30 Tu	0327	12.4	378
	0954	2.2	67		0929	1.0	30
	1548	11.1	338		1519	11.8	360
	2207	0.1	3		2142	-0.4	-12
				31 W	0359	12.6	384
					1015	0.8	24
					1607	10.7	326
					2220	0.7	21

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0438	12.5	381	16 F	0438	11.2	341
	1110	0.9	27		1125	2.3	70
	1707	9.3	283		1734	7.9	241
	2300	2.0	61		2300	4.2	128
2 F	0525	12.2	372	17 Sa	0520	10.6	323
	1211	1.1	34		1221	2.8	85
	1834	8.1	247		1907	7.1	216
	2351	3.4	104		2342	5.1	155
3 Sa	0626	11.8	360	18 Su	0622	10.1	308
	1325	1.2	37		1340	3.1	94
	2019	7.6	232		2056	7.0	213
4 Su	0056	4.5	137	19 M	0041	5.9	180
	0745	11.5	351		0748	9.9	302
	1458	0.9	27		1523	2.6	79
	2154	7.9	241		2218	7.5	229
5 M	0227	5.1	155	20 Tu	0235	6.2	189
	0902	11.6	354		0904	10.1	308
	1621	0.0	0		1631	1.6	49
	2307	8.7	265		2311	8.2	250
6 Tu	0405	4.7	143	21 W	0411	5.5	168
	1013	12.0	366		1005	10.8	329
	1719	-0.9	-27		1714	0.5	15
					2349	9.1	277
7 W	0001	9.6	293	22 Th	0506	4.4	134
	0512	3.8	116		1058	11.5	351
	1114	12.5	381		1749	-0.5	-15
	1804	-1.7	-52				
8 Th	0044	10.4	317	23 F	0021	10.0	305
	0601	2.7	82		0548	3.2	98
	1209	12.8	390		1143	12.2	372
	1843	-2.1	-64		1824	-1.2	-37
9 F	0119	11.2	341	24 Sa	0053	11.0	335
	0647	1.9	58		0625	2.0	61
	1254	13.0	396		1229	12.8	390
	1920	-2.2	-67		1854	-1.7	-52
10 Sa	0154	11.7	357	25 Su	0119	11.9	363
	0729	1.3	40		0704	0.9	27
	1336	12.9	393		1308	13.1	399
	1954	-1.9	-58		1928	-1.8	-55
11 Su	0223	12.1	369	26 M	0148	12.7	387
	0807	0.9	27		0743	0.0	0
	1411	12.5	381		1349	13.0	396
	2027	-1.3	-40		2002	-1.4	-43
12 M	0250	12.3	375	27 Tu	0218	13.3	405
	0844	0.8	24		0826	-0.7	-21
	1447	11.9	363		1431	12.6	384
	2058	-0.4	-12		2037	-0.7	-21
13 Tu	0316	12.3	375	28 W	0250	13.6	415
	0922	1.0	30		0910	-0.9	-27
	1519	11.1	338		1515	11.7	357
	2127	0.7	21		2115	0.4	12
14 W	0343	12.0	366				
	1001	1.3	40				
	1556	10.1	308				
	2159	1.9	58				
15 Th	0409	11.7	357				
	1040	1.7	52				
	1636	9.0	274				
	2228	3.1	94				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0322	13.5	411	16 F	0319	12.0	366
	0958	-0.8	-24		1004	1.0	30
	1604	10.5	320		1609	9.2	280
	2155	1.6	49		2152	3.7	113
2 F	0401	13.1	399	17 Sa	0345	11.4	347
	1051	-0.3	-9		1046	1.7	52
	1705	9.2	280		1700	8.2	250
	2238	2.9	88		2224	4.6	140
3 Sa	0449	12.3	375	18 Su	0420	10.7	326
	1150	0.4	12		1137	2.3	70
	1835	8.1	247		1827	7.4	226
	2332	4.1	125		2307	5.4	165
4 Su	0557	11.4	347	19 M	0513	10.0	305
	1306	1.1	34		1243	2.8	85
	2019	7.8	238		2017	7.3	223
5 M	0045	5.0	152	20 Tu	0008	6.0	183
	0731	10.8	329		0649	9.5	290
	1443	1.2	37		1415	2.7	82
	2145	8.3	253		2133	7.8	238
6 Tu	0232	5.2	158	21 W	0155	6.1	186
	0901	10.8	329		0827	9.6	293
	1605	0.5	15		1539	2.0	61
	2250	9.1	277		2221	8.6	262
7 W	0409	4.4	134	22 Th	0339	5.2	158
	1013	11.2	341		0936	10.2	311
	1703	-0.2	-6		1631	1.1	34
	2337	10.0	305		2301	9.6	293
8 Th	0509	3.1	94	23 F	0439	3.8	116
	1111	11.6	354		1032	11.0	335
	1744	-0.8	-24		1711	0.2	6
					2333	10.6	323
9 F	0015	10.8	329	24 Sa	0524	2.2	67
	0553	2.0	61		1124	11.7	357
	1201	12.0	366		1746	-0.4	-12
	1820	-1.0	-30				
10 Sa	0049	11.6	354	25 Su	0005	11.8	360
	0634	1.0	30		0605	0.6	18
	1242	12.2	372		1210	12.3	375
	1854	-0.9	-27		1820	-0.7	-21
11 Su	0116	12.1	369	26 M	0036	12.8	390
	0709	0.3	9		0644	-0.8	-24
	1321	12.2	372		1255	12.6	384
	1923	-0.6	-18		1857	-0.6	-18
12 M	0144	12.5	381	27 Tu	0108	13.6	415
	0744	-0.1	-3		0724	-1.8	-55
	1353	11.9	363		1339	12.6	384
	1952	0.1	3		1933	-0.2	-6
13 Tu	0207	12.7	387	28 W	0142	14.2	433
	0818	-0.2	-6		0809	-2.3	-70
	1427	11.5	351		1425	12.2	372
	2023	0.9	27		2012	0.6	18
14 W	0230	12.6	384	29 Th	0218	14.3	436
	0852	0.0	0		0855	-2.3	-70
	1458	10.9	332		1514	11.4	347
	2052	1.8	55		2054	1.5	46
15 Th	0252	12.4	378	30 F	0255	14.0	427
	0927	0.4	12		0943	-1.9	-58
	1533	10.1	308		1603	10.4	317
	2121	2.8	85		2139	2.6	79
				31 Sa	0337	13.2	402
					1036	-1.0	-30
					1710	9.3	283
					2227	3.6	110

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0430	12.1	369	16 M	0347	10.8	329
	1135	0.0	0		1106	1.5	46
	1838	8.6	262		1805	7.9	241
	2329	4.5	137		2252	5.4	165
2 M	0545	10.9	332	17 Tu	0433	10.1	308
	1248	0.9	27		1203	2.0	61
	2007	8.6	262		1931	8.0	244
					2358	5.7	174
3 Tu	0049	5.1	155	18 W	0606	9.4	287
	0728	10.2	311		1312	2.1	64
	1414	1.3	40		2037	8.5	259
	2120	9.1	277				
4 W	0236	4.8	146	19 Th	0125	5.5	168
	0854	10.2	311		0748	9.3	283
	1533	1.1	34		1424	2.0	61
	2215	9.8	299		2125	9.3	283
5 Th	0402	3.7	113	20 F	0258	4.5	137
	1000	10.4	317		0901	9.6	293
	1629	0.8	24		1527	1.6	49
	2259	10.6	323		2203	10.3	314
6 F	0455	2.4	73	21 Sa	0405	2.9	88
	1056	10.7	326		1003	10.2	311
	1712	0.5	15		1619	1.1	34
	2335	11.3	344		2239	11.4	347
7 Sa	0538	1.2	37	22 Su	0455	1.1	34
	1145	11.0	335		1058	10.9	332
	1747	0.5	15		1703	0.8	24
					2314	12.5	381
8 Su	0005	11.9	363	23 M	0540	-0.6	-18
	0613	0.3	9		1153	11.4	347
	1227	11.1	338		1746	0.7	21
	1820	0.8	24		2353	13.5	411
9 M	0033	12.3	375	24 Tu	0623	-2.0	-61
	0647	-0.3	-9		1242	11.7	357
	1305	11.2	341		1826	0.9	27
	1850	1.1	34				
10 Tu	0059	12.6	384	25 W	0030	14.2	433
	0721	-0.7	-21		0708	-3.0	-91
	1338	11.1	338		1332	11.8	360
	1919	1.7	52		1908	1.2	37
11 W	0123	12.7	387	26 Th	0112	14.6	445
	0753	-0.8	-24		0753	-3.3	-101
	1412	10.9	332		1421	11.6	354
	1951	2.3	70		1952	1.8	55
12 Th	0149	12.7	387	27 F	0154	14.5	442
	0826	-0.6	-18		0839	-3.1	-94
	1444	10.5	320		1511	11.0	335
	2020	3.0	91		2038	2.4	73
13 F	0214	12.5	381	28 Sa	0237	14.0	427
	0900	-0.2	-6		0932	-2.5	-76
	1519	9.9	302		1607	10.4	317
	2051	3.7	113		2127	3.1	94
14 Sa	0239	12.1	369	29 Su	0326	13.0	396
	0937	0.4	12		1025	-1.5	-46
	1556	9.2	280		1713	9.7	296
	2124	4.3	131		2225	3.8	116
15 Su	0311	11.5	351	30 M	0425	1.8	360
	1020	1.0	30		1121	-0.5	-15
	1646	8.5	259		1829	9.4	287
	2205	4.9	149		2329	4.3	131

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0542	10.6	323	16 W	0417	10.2	311
	1224	0.5	15		1131	0.9	27
	1942	9.5	290		1842	8.9	271
					2345	4.9	149
2 W	0049	4.4	134	17 Th	0531	9.4	287
	0710	9.8	299		1222	1.3	40
	1332	1.2	37		1937	9.4	287
	2040	9.9	302				
3 Th	0217	4.0	122	18 F	0059	4.4	134
	0832	9.4	287		0706	9.0	274
	1441	1.6	49		1320	1.7	52
	2128	10.5	320		2023	10.1	308
4 F	0338	3.0	91	19 Sa	0218	3.4	104
	0938	9.4	287		0825	9.0	274
	1544	1.8	55		1424	1.9	58
	2211	11.0	335		2105	11.1	338
5 Sa	0431	1.8	55	20 Su	0328	1.9	58
	1034	9.5	290		0934	9.3	283
	1630	2.0	61		1523	2.1	64
	2247	11.5	351		2147	12.0	366
6 Su	0513	0.8	24	21 M	0427	0.2	6
	1122	9.7	296		1039	9.7	296
	1711	2.2	67		1619	2.1	64
	2317	11.9	363		2229	12.9	393
7 M	0551	0.0	0	22 Tu	0519	-1.4	-43
	1209	10.0	305		1138	10.2	311
	1746	2.4	73		1711	2.1	64
	2349	12.2	372		2315	13.7	418
8 Tu	0625	-0.6	-18	23 W	0607	-2.7	-82
	1249	10.1	308		1233	10.6	323
	1818	2.7	82		1800	2.1	64
9 W	0017	12.4	378	24 Th	0001	14.2	433
	0657	-1.0	-30		0653	-3.5	-107
	1326	10.2	311		1329	10.9	332
	1850	3.0	91		1849	2.2	67
10 Th	0046	12.5	381	25 F	0050	14.4	439
	0730	-1.1	-34		0742	-3.7	-113
	1402	10.2	311		1418	10.9	332
	1923	3.4	104		1937	2.4	73
11 F	0117	12.5	381	26 Sa	0138	14.2	433
	0806	-0.9	-27		0829	-3.5	-107
	1437	10.0	305		1510	10.8	329
	1957	3.8	116		2029	2.6	79
12 Sa	0146	12.3	375	27 Su	0228	13.6	415
	0841	-0.7	-21		0919	-2.9	-88
	1513	9.6	293		1604	10.6	323
	2031	4.2	128		2121	2.9	88
13 Su	0218	12.0	366	28 M	0320	12.7	387
	0919	-0.3	-9		1009	-2.0	-61
	1551	9.2	280		1700	10.3	314
	2108	4.5	137		2217	3.3	101
14 M	0250	11.6	354	29 Tu	0415	11.5	351
	0959	0.1	3		1100	-1.0	-30
	1641	8.9	271		1800	10.2	311
	2153	4.8	146		2318	3.5	107
15 Tu	0329	10.9	332	30 W	0521	10.3	314
	1045	0.5	15		1151	0.1	3
	1737	8.7	265		1856	10.3	314
	2245	5.0	152				
				31 Th	0027	3.5	107
					0641	9.3	283
					1243	1.2	37
					1947	10.5	320

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0143	3.2	98	16 Sa	0027	3.0	91
	0756	8.6	262		0627	8.7	265
	1342	2.1	64		1230	1.6	49
	2036	10.8	329		1924	10.9	332
2 Sa	0259	2.6	79	17 Su	0139	2.2	67
	0905	8.4	256		0755	8.3	253
	1441	2.9	88		1325	2.4	73
	2117	11.0	335		2013	11.6	354
3 Su	0402	1.7	52	18 M	0254	1.1	34
	1005	8.4	256		0912	8.4	256
	1536	3.4	104		1433	3.0	91
	2155	11.3	344		2105	12.2	372
4 M	0450	0.8	24	19 Tu	0403	-0.3	-9
	1102	8.6	262		1026	8.7	265
	1628	3.6	110		1544	3.3	101
	2232	11.6	354		2158	12.9	393
5 Tu	0528	0.1	3	20 W	0503	-1.6	-49
	1155	8.9	271		1133	9.2	280
	1710	3.8	116		1648	3.2	98
	2307	11.8	360		2251	13.4	408
6 W	0604	-0.5	-15	21 Th	0554	-2.7	-82
	1237	9.2	280		1232	9.8	299
	1749	3.8	116		1744	2.9	88
	2343	12.0	366		2346	13.8	421
7 Th	0640	-0.9	-27	22 F	0644	-3.4	-104
	1316	9.4	287		1324	10.3	314
	1826	3.9	119		1836	2.5	76
8 F	0020	12.2	372	23 Sa	0041	14.0	427
	0715	-1.2	-37		0730	-3.7	-113
	1354	9.6	293		1413	10.7	326
	1903	3.9	119		1928	2.3	70
9 Sa	0054	12.3	375	24 Su	0130	13.8	421
	0749	-1.3	-40		0818	-3.5	-107
	1429	9.7	296		1458	10.9	332
	1939	3.9	119		2018	2.2	67
10 Su	0130	12.2	372	25 M	0220	13.3	405
	0825	-1.2	-37		0902	-3.0	-91
	1505	9.7	296		1543	11.0	335
	2017	4.0	122		2111	2.2	67
11 M	0206	12.0	366	26 Tu	0311	12.5	381
	0903	-1.1	-34		0947	-2.1	-64
	1540	9.6	293		1628	11.0	335
	2057	4.0	122		2202	2.3	70
12 Tu	0241	11.7	357	27 W	0358	11.3	344
	0939	-0.8	-24		1029	-1.0	-30
	1619	9.7	296		1713	10.9	332
	2143	4.0	122		2254	2.5	76
13 W	0320	11.1	338	28 Th	0452	10.1	308
	1017	-0.5	-15		1112	0.2	6
	1700	9.8	299		1800	10.8	329
	2232	3.9	119		2352	2.6	79
14 Th	0407	10.3	314	29 F	0558	8.9	271
	1100	0.1	3		1154	1.5	46
	1745	10.0	305		1848	10.7	326
	2325	3.5	107				
15 F	0507	9.4	287	30 Sa	0054	2.7	82
	1142	0.8	24		0711	8.1	247
	1835	10.4	317		1235	2.7	82
					1936	10.7	326

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

VALDEZ, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height (ft)	Height (cm)
1 Su	0203	2.5	76
	0824	7.6	232
	1331	3.7	113
	2022	10.7	326
2 M	0318	2.0	61
	0934	7.6	232
	1433	4.5	137
	2107	10.8	329
3 Tu	0418	1.3	40
	1039	7.8	238
	1546	4.8	146
	2154	11.0	335
4 W	0508	0.5	15
	1138	8.2	250
	1642	4.7	143
	2239	11.3	344
5 Th	0548	-0.1	-3
	1225	8.7	265
	1730	4.4	134
	2322	11.6	354
6 F	0625	-0.7	-21
	1306	9.1	277
	1809	4.1	125
7 Sa	0004	12.0	366
	0659	-1.2	-37
	1342	9.5	290
	1846	3.7	113
8 Su	0043	12.2	372
	0734	-1.5	-46
	1410	9.9	302
	1923	3.4	104
9 M	0118	12.4	378
	0806	-1.7	-52
	1442	10.2	311
	2001	3.1	94
10 Tu	0154	12.3	375
	0839	-1.6	-49
	1514	10.5	320
	2042	2.9	88
11 W	0232	12.0	366
	0914	-1.3	-40
	1543	10.8	329
	2126	2.6	79
12 Th	0311	11.4	347
	0948	-0.8	-24
	1615	11.0	335
	2212	2.3	70
13 F	0353	10.6	323
	1025	0.0	0
	1652	11.2	341
	2302	2.0	61
14 Sa	0449	9.5	290
	1105	1.0	30
	1736	11.4	347
15 Su	0000	1.8	55
	0603	8.5	259
	1150	2.1	64
	1829	11.5	351
16 M	0107	1.4	43
	0735	7.8	238
	1245	3.2	98
	1932	11.7	357
17 Tu	0230	0.8	24
	0905	7.8	238
	1355	4.0	122
	2035	12.0	366
18 W	0349	-0.1	-3
	1022	8.2	250
	1521	4.2	128
	2139	12.4	378
19 Th	0453	-1.3	-40
	1130	8.9	271
	1637	3.8	116
	2242	12.9	393
20 F	0548	-2.2	-67
	1229	9.6	293
	1739	3.0	91
	2341	13.3	405
21 Sa	0634	-2.9	-88
	1315	10.4	317
	1830	2.3	70
22 Su	0036	13.5	411
	0718	-3.2	-98
	1357	11.0	335
	1918	1.7	52
23 M	0125	13.5	411
	0758	-3.0	-91
	1436	11.5	351
	2005	1.3	40
24 Tu	0210	13.1	399
	0837	-2.4	-73
	1511	11.7	357
	2051	1.2	37
25 W	0254	12.3	375
	0915	-1.5	-46
	1546	11.7	357
	2137	1.3	40
26 Th	0335	11.3	344
	0951	-0.4	-12
	1620	11.6	354
	2222	1.5	46
27 F	0420	10.1	308
	1028	0.9	27
	1657	11.3	344
	2309	1.9	58
28 Sa	0513	9.0	274
	1104	2.2	67
	1737	10.9	332
29 Su	0001	2.3	70
	0619	8.0	244
	1142	3.5	107
	1823	10.5	320
30 M	0104	2.6	79
	0743	7.4	226
	1228	4.6	140
	1922	10.3	314
31 Tu	0223	2.6	79
	0909	7.3	223
	1331	5.4	165
	2023	10.2	311

AUGUST

Day	Time	Height (ft)	Height (cm)
1 W	0346	2.1	64
	1021	7.6	232
	1507	5.6	171
	2123	10.5	320
2 Th	0447	1.3	40
	1124	8.1	247
	1623	5.2	158
	2218	10.9	332
3 F	0530	0.4	12
	1206	8.8	268
	1711	4.6	140
	2304	11.5	351
4 Sa	0604	-0.4	-12
	1241	9.4	287
	1753	3.9	119
	2349	12.0	366
5 Su	0636	-1.0	-30
	1310	10.1	308
	1831	3.1	94
6 M	0028	12.4	378
	0708	-1.5	-46
	1341	10.7	326
	1907	2.4	73
7 Tu	0106	12.7	387
	0739	-1.6	-49
	1407	11.3	344
	1945	1.8	55
8 W	0142	12.7	387
	0811	-1.5	-46
	1435	11.8	360
	2023	1.3	40
9 Th	0221	12.4	378
	0844	-1.0	-30
	1503	12.2	372
	2105	0.9	27
10 F	0300	11.7	357
	0919	-0.2	-6
	1532	12.4	378
	2151	0.7	21
11 Sa	0343	10.8	329
	0956	0.8	24
	1607	12.4	378
	2240	0.7	21
12 Su	0436	9.6	293
	1036	2.0	61
	1649	12.2	372
	2336	0.9	27
13 M	0550	8.5	259
	1121	3.1	94
	1744	11.8	360
14 Tu	0045	1.1	34
	0731	7.8	238
	1220	4.2	128
	1901	11.5	351
15 W	0208	1.1	34
	0909	7.8	238
	1342	4.9	149
	2025	11.5	351
16 Th	0338	0.4	12
	1023	8.5	259
	1523	4.7	143
	2141	11.9	363
17 F	0447	-0.6	-18
	1125	9.3	283
	1639	3.8	116
	2243	12.4	378
18 Sa	0536	-1.4	-43
	1212	10.2	311
	1735	2.7	82
	2340	12.9	393
19 Su	0618	-1.9	-58
	1252	11.1	338
	1823	1.6	49
20 M	0031	13.2	402
	0657	-2.1	-64
	1327	11.8	360
	1906	0.9	27
21 Tu	0113	13.1	399
	0733	-1.8	-55
	1359	12.3	375
	1945	0.4	12
22 W	0155	12.8	390
	0807	-1.2	-37
	1429	12.5	381
	2026	0.3	9
23 Th	0234	12.2	372
	0839	-0.2	-6
	1457	12.5	381
	2106	0.5	15
24 F	0310	11.3	344
	0914	0.9	27
	1524	12.3	375
	2145	0.9	27
25 Sa	0348	10.4	317
	0945	2.1	64
	1551	11.8	360
	2227	1.5	46
26 Su	0430	9.3	283
	1019	3.3	101
	1625	11.2	341
	2313	2.1	64
27 M	0531	8.3	253
	1054	4.4	134
	1707	10.6	323
28 Tu	0008	2.8	85
	0703	7.6	232
	1137	5.4	165
	1814	10.0	305
29 W	0124	3.2	98
	0840	7.5	229
	1241	6.1	186
	1941	9.8	299
30 Th	0304	2.9	88
	0956	7.9	241
	1433	6.2	189
	2057	10.1	308
31 F	0416	2.1	64
	1050	8.6	262
	1602	5.5	168
	2157	10.7	326

SEPTEMBER

Day	Time	Height (ft)	Height (cm)
1 Sa	0459	1.1	34
	1127	9.3	283
	1653	4.5	137
	2245	11.4	347
2 Su	0535	0.3	9
	1201	10.2	311
	1733	3.4	104
	2330	12.0	366
3 M	0604	-0.4	-12
	1229	11.0	335
	1809	2.2	67
4 Tu	0009	12.6	384
	0636	-0.8	-24
	1256	11.9	363
	1847	1.2	37
5 W	0049	12.9	393
	0706	-0.8	-24
	1324	12.7	387
	1923	0.3	9
6 Th	0129	12.9	393
	0738	-0.5	-15
	1352	13.3	405
	2002	-0.4	-12
7 F	0208	12.6	384
	0814	0.1	3
	1421	13.6	415
	2044	-0.7	-21
8 Sa	0250	12.0	366
	0849	1.0	30
	1455	13.7	418
	2129	-0.6	-18
9 Su	0337	11.0	335
	0927	2.1	64
	1530	13.4	408
	2220	-0.2	-6
10 M	0433	9.8	299
	1012	3.2	98
	1615	12.7	387
	2317	0.5	15
11 Tu	0553	8.7	265
	1105	4.3	131
	1718	11.8	360
12 W	0026	1.2	37
	0739	8.3	253
	1214	5.2	158
	1851	11.1	338
13 Th	0155	1.4	43
	0909	8.7	265
	1347	5.4	165
	2027	11.1	338
14 F	0323	1.0	30
	1010	9.4	287
	1531	4.7	143
	2142	11.5	351
15 Sa	0429	0.3	9
	1103	10.4	317
	1639	3.4	104
	2252	12.0	366
16 Su	0516	-0.2	-6
	1144	11.2	341
	1727	2.0	61
	2333	12.4	378
17 M	0556	-0.5	-15
	1217	12.0	366
	1809	0.9	27
18 Tu	0020	12.6	384
	0628	-0.4	-12
	1249	12.6	384
	1848	0.2	6
19 W	0101	12.6	384
	0703	0.0	0
	1318	13.0	396
	1923	-0.2	-6
20 Th	0138	12.3	375
	0734	0.6	18
	1345	13.2	402
	2000	-0.3	-9
21 F	0213	11.9	363
	0804	1.5	46
	1410	13.1	399
	2034	-0.1	-3
22 Sa	0247	11.3	344
	0835	2.5	76
	1435	12.8	390
	2111	0.4	12
23 Su	0323	10.6	323
	0907	3.5	107
	1459	12.3	375
	2151	1.1	34
24 M	0403	9.7	296
	0942	4.4	134
	1529	11.7	357
	2233	1.9	58
25 Tu	0452	8.8	268
	1017	5.3	162
	1604	10.9	332
	2326	2.7	82
26 W	0627	8.1	247
	1103	6.0	183
	1700	10.1	308
27 Th	0030	3.2	98
	0811	8.0	244
	1212	6.5	198
	1849	9.6	293
28 F	0157	3.3	101
	0917	8.5	259
	1355	6.5	198
	2021	9.8	299
29 Sa	0317	2.7	82
	1005	9.3	283
	1533	5.6	171
	2127	10.3	314
30 Su	0410	2.0	61
	1037	10.2	311
	1626	4.2	128
	2219	11.0	335

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0450	1.3	40	16	0524	1.2	37
M	1109	11.1	338	Tu	1138	12.7	387
	1708	2.7	82		1753	0.4	12
	2304	11.7	357				
2	0524	0.7	21	17	0007	11.7	357
Tu	1140	12.2	372	W	0559	1.5	46
	1746	1.2	37		1209	13.1	399
	2350	12.3	375		1828	-0.3	-9
3	0559	0.5	15	18	0046	11.7	357
W	1209	13.1	399	Th	0631	1.9	58
	1822	-0.1	-3		1235	13.4	408
					1903	-0.6	-18
4	0033	12.7	387	19	0123	11.7	357
Th	0631	0.5	15	F	0703	2.4	73
	1240	13.9	424		1303	13.5	411
	1901	-1.2	-37		1936	-0.6	-18
5	0118	12.8	390	20	0159	11.5	351
F	0709	0.9	27	Sa	0734	3.1	94
	1312	14.5	442		1329	13.3	405
	1943	-1.8	-55		2010	-0.4	-12
6	0159	12.5	381	21	0234	11.1	338
Sa	0745	1.5	46	Su	0806	3.7	113
	1349	14.7	448		1356	13.0	396
	2025	-1.9	-58		2045	0.1	3
7	0245	11.9	363	22	0306	10.5	320
Su	0826	2.3	70	M	0838	4.4	134
	1423	14.5	442		1423	12.6	384
	2114	-1.5	-46		2122	0.8	24
8	0336	11.1	338	23	0348	9.9	302
M	0911	3.2	98	Tu	0914	5.1	155
	1506	13.9	424		1455	12.0	366
	2206	-0.8	-24		2204	1.4	43
9	0438	10.1	308	24	0438	9.2	280
Tu	1001	4.1	125	W	0953	5.7	174
	1556	12.9	393		1527	11.2	341
	2305	0.2	6		2252	2.1	64
10	0600	9.3	283	25	0552	8.7	265
W	1100	5.0	152	Th	1043	6.2	189
	1705	11.7	357		1619	10.4	317
					2347	2.6	79
11	0011	1.1	34	26	0718	8.8	268
Th	0731	9.3	283	F	1150	6.4	195
	1218	5.4	165		1745	9.6	293
	1848	10.8	329				
12	0131	1.6	49	27	0048	2.9	88
F	0846	9.8	299	Sa	0821	9.2	280
	1357	5.2	158		1314	6.2	189
	2021	10.7	326		1933	9.4	287
13	0254	1.6	49	28	0159	2.9	88
Sa	0941	10.5	320	Su	0906	10.0	305
	1528	4.1	125		1447	5.2	158
	2132	10.9	332		2048	9.7	296
14	0357	1.4	43	29	0302	2.7	82
Su	1027	11.4	347	M	0941	10.9	332
	1631	2.7	82		1550	3.7	113
	2231	11.2	341		2147	10.3	314
15	0445	1.2	37	30	0355	2.3	70
M	1106	12.1	369	Tu	1016	11.9	363
	1714	1.4	43		1638	2.0	61
	2322	11.5	351		2239	10.9	332
				31	0439	2.1	64
				W	1048	13.0	396
					1720	0.3	9
					2330	11.5	351

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0520	1.9	58	16	0038	10.7	326
Th	1124	13.9	424	F	0602	3.5	107
	1802	-1.2	-37		1200	13.2	402
					1844	-0.7	-21
2	0020	11.9	363	17	0116	10.8	329
F	0602	2.0	61	Sa	0637	3.8	116
	1202	14.7	448		1229	13.2	402
	1844	-2.2	-67		1917	-0.8	-24
3	0108	12.2	372	18	0149	10.8	329
Sa	0641	2.2	67	Su	0710	4.1	125
	1241	15.1	460		1301	13.2	402
	1927	-2.8	-85		1952	-0.6	-18
4	0157	12.1	369	19	0225	10.7	326
Su	0723	2.6	79	M	0744	4.4	134
	1324	15.2	463		1333	12.9	393
	2013	-2.7	-82		2028	-0.3	-9
5	0245	11.7	357	20	0303	10.4	317
M	0811	3.1	94	Tu	0818	4.7	143
	1406	14.8	451		1405	12.6	384
	2102	-2.2	-67		2103	0.1	3
6	0337	11.1	338	21	0339	10.0	305
Tu	0900	3.7	113	W	0857	5.1	155
	1455	14.0	427		1436	12.1	369
	2154	-1.4	-43		2143	0.6	18
7	0437	10.6	323	22	0424	9.7	296
W	0956	4.2	128	Th	0940	5.4	165
	1551	12.8	390		1512	11.4	347
	2251	-0.4	-12		2225	1.1	34
8	0552	10.2	311	23	0517	9.5	290
Th	1100	4.7	143	F	1028	5.6	171
	1700	11.5	351		1557	10.6	323
	2351	0.6	18		2307	1.6	49
9	0704	10.3	314	24	0614	9.6	293
F	1214	4.9	149	Sa	1126	5.6	171
	1833	10.5	320		1700	9.8	299
					2356	2.1	64
10	0057	1.5	46	25	0711	10.0	305
Sa	0811	10.7	326	Su	1235	5.2	158
	1342	4.5	137		1832	9.1	277
	2002	10.0	305				
11	0204	2.2	67	26	0049	2.6	79
Su	0859	11.3	344	M	0759	10.6	323
	1512	3.5	107		1350	4.3	131
	2112	9.9	302		1959	9.0	274
12	0310	2.5	76	27	0147	3.0	91
M	0944	11.9	363	Tu	0841	11.4	347
	1610	2.3	70		1504	3.0	91
	2214	10.1	308		2112	9.3	283
13	0402	2.8	85	28	0251	3.3	101
Tu	1023	12.3	375	W	0923	12.3	375
	1658	1.1	34		1606	1.3	40
	2306	10.3	314		2216	9.8	299
14	0448	3.0	91	29	0349	3.3	101
W	1056	12.7	387	Th	1005	13.2	402
	1735	0.3	9		1656	-0.4	-12
	2353	10.5	320		2315	10.4	317
15	0527	3.2	98	30	0447	3.2	98
Th	1130	13.0	396	F	1050	14.1	430
	1810	-0.4	-12		1744	-1.8	-55

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0012	10.9	332	16	0113	10.0	305
Sa	0535	3.1	94	Su	0618	4.4	134
	1135	14.7	448		1210	12.7	387
	1830	-2.8	-85		1905	-0.8	-24
2	0105	11.3	344	17	0147	10.3	314
Su	0623	3.0	91	M	0653	4.3	131
	1221	15.0	457		1246	12.8	390
	1918	-3.3	-101		1939	-0.9	-27
3	0155	11.5	351	18	0220	10.4	317
M	0711	2.9	88	Tu	0729	4.3	131
	1312	15.0	457		1321	12.7	387
	2004	-3.3	-101		2012	-0.9	-27
4	0245	11.5	351	19	0252	10.4	317
Tu	0801	3.0	91	W	0807	4.3	131
	1402	14.6	445		1353	12.6	384
	2052	-2.8	-85		2047	-0.7	-21
5	0335	11.4	347	20	0324	10.5	320
W	0852	3.2	98	Th	0843	4.3	131
	1453	13.8	421		1426	12.2	372
	2140	-2.0	-61		2121	-0.4	-12
6	0427	11.2	341	21	0359	10.5	320
Th	0948	3.4	104	F	0924	4.3	131
	1545	12.6	384		1503	11.6	354
	2230	-1.0	-30		2156	0.0	0
7	0523	11.1	338	22	0433	10.5	320
F	1048	3.6	110	Sa	1012	4.2	128
	1648	11.3	344		1542	10.9	332
	2321	0.2	6		2233	0.6	18
8	0621	11.1	338	23	0513	10.6	323
Sa	1155	3.7	113	Su	1101	4.0	122
	1804	10.0	305		1632	9.9	302
					2310	1.4	43
9	0013	1.4	43	24	0555	10.8	329
Su	0717	11.2	341	M	1157	3.7	113
	1307	3.5	107		1742	9.0	274
	1927	9.2	280		2355	2.2	67
10	0108	2.6	79	25	0647	11.2	341
M	0807	11.4	347	Tu	1303	3.1	94
	1426	3.0	91		1915	8.4	256
	2042	8.8	268				
11	0208	3.5	107	26	0045	3.1	94
Tu	0853	11.7	357	W	0739	11.7	357
	1542	2.2	67		1419	2.2	67
	2149	8.8	268		2041	8.3	253
12	0313	4.1	125	27	0150	3.9	119
W	0936	11.9	363	Th	0832	12.2	372
	1634	1.3	40		1534	0.9	27
	2250	9.0	274		2202	8.6	262
13	0409	4.5	137	28	0307	4.3	131
Th	1018	12.1	369	F	0928	12.9	393
	1716	0.5	15		1639	-0.5	-15
	2346	9.4	287		2309	9.2	280
14	0458	4.5	137	29	0418	4.1	125
F	1055	12.3	375	Sa	1024	13.5	411
	1755	-0.1	-3		1732	-1.9	-58
15	0031	9.7	296	30	0012	10.0	305
Sa	0540	4.5	137	Su	0519	3.7	113
	1133	12.5	381		1121	14.1	430
	1830	-0.6	-18		1821	-2.9	-88
				31	0103	10.7	326
				M	0613	3.1	94
					1215	14.5	442
					1908	-3.4	-104

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SELDOVIA, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0514	18.0	549	16 Tu	0543	18.2	555
	1103	3.2	98		1147	2.8	85
	1658	17.7	539		1748	15.8	482
	2320	-0.6	-18		2353	2.0	61
2 Tu	0552	17.9	546	17 W	0617	17.2	524
	1151	3.1	94		1233	3.6	110
	1751	16.4	500		1836	14.1	430
3 W	0002	0.8	24	18 Th	0028	4.0	122
	0634	17.7	539		0653	16.3	497
	1249	3.0	91		1325	4.3	131
	1849	15.0	457		1931	12.5	381
4 Th	0049	2.4	73	19 F	0110	5.8	177
	0721	17.5	533		0734	15.4	469
	1352	2.7	82		1430	4.8	146
	2002	13.9	424		2049	11.5	351
5 F	0150	4.1	125	20 Sa	0209	7.4	226
	0816	17.3	527		0824	14.7	448
	1507	2.1	64		1553	4.7	143
	2127	13.4	408		2233	11.4	347
6 Sa	0259	5.3	162	21 Su	0328	8.3	253
	0921	17.4	530		0932	14.5	442
	1624	0.9	27		1712	3.8	116
	2256	13.8	421				
7 Su	0419	5.7	174	22 M	0002	12.3	375
	1030	17.8	543		0451	8.3	253
	1733	-0.6	-18		1045	14.9	454
					1807	2.5	76
8 M	0010	15.1	460	23 Tu	0054	13.6	415
	0531	5.3	162		0557	7.5	229
	1137	18.6	567		1146	15.8	482
	1831	-2.1	-64		1850	1.1	34
9 Tu	0108	16.5	503	24 W	0132	14.9	454
	0631	4.4	134		0645	6.3	192
	1236	19.5	594		1239	17.1	521
	1922	-3.3	-101		1927	-0.4	-12
10 W	0157	17.8	543	25 Th	0205	16.2	494
	0725	3.3	101		0727	4.9	149
	1329	20.3	619		1322	18.3	558
	2007	-4.1	-125		2001	-1.6	-49
11 Th	0239	18.8	573	26 F	0237	17.4	530
	0814	2.3	70		0805	3.6	110
	1417	20.7	631		1404	19.4	591
	2049	-4.4	-134		2034	-2.6	-79
12 F	0321	19.4	591	27 Sa	0305	18.5	564
	0859	1.7	52		0844	2.4	73
	1502	20.6	628		1443	20.0	610
	2128	-4.0	-122		2109	-3.1	-94
13 Sa	0358	19.6	597	28 Su	0337	19.3	588
	0943	1.4	43		0924	1.4	43
	1544	20.0	610		1523	20.2	616
	2207	-3.1	-94		2141	-3.0	-91
14 Su	0435	19.4	591	29 M	0409	19.8	604
	1025	1.6	49		1001	0.6	18
	1625	18.9	576		1605	19.8	604
	2242	-1.7	-52		2218	-2.3	-70
15 M	0508	18.9	576	30 Tu	0441	20.0	610
	1106	2.1	64		1043	0.3	9
	1706	17.4	530		1647	18.8	573
	2316	0.1	3		2255	-1.0	-30
				31 W	0516	19.8	604
					1128	0.3	9
					1737	17.3	527
					2335	0.8	24

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0556	19.2	585	16 F	0551	16.7	509
	1220	0.7	21		1225	3.4	104
	1830	15.5	472		1844	13.0	396
2 F	0020	2.8	85	17 Sa	0017	6.0	183
	0641	18.3	558		0628	15.5	472
	1320	1.4	43		1318	4.5	137
	1941	13.8	421		1950	11.5	351
3 Sa	0118	4.8	146	18 Su	0102	7.7	235
	0735	17.3	527		0715	14.4	439
	1438	1.8	55		1437	5.2	158
	2110	12.8	390		2140	10.8	329
4 Su	0232	6.4	195	19 M	0225	8.9	271
	0850	16.5	503		0831	13.6	415
	1608	1.5	46		1627	4.8	146
	2253	13.2	402		2342	11.7	357
5 M	0403	6.8	207	20 Tu	0416	8.9	271
	1015	16.4	500		1007	13.8	421
	1725	0.3	9		1741	3.4	104
6 Tu	0010	14.6	445	21 W	0031	13.1	399
	0528	5.9	180		0533	7.7	235
	1133	17.2	524		1125	14.9	454
	1826	-1.1	-34		1826	1.7	52
7 W	0106	16.2	494	22 Th	0106	14.7	448
	0631	4.4	134		0626	5.9	180
	1237	18.4	561		1218	16.5	503
	1914	-2.3	-70		1900	0.1	3
8 Th	0148	17.7	539	23 F	0135	16.4	500
	0722	2.9	88		0708	4.0	122
	1327	19.4	591		1307	18.2	555
	1956	-3.1	-94		1935	-1.4	-43
9 F	0225	18.9	576	24 Sa	0203	18.0	549
	0805	1.5	46		0745	2.0	61
	1412	20.1	613		1349	19.6	597
	2033	-3.3	-101		2007	-2.4	-73
10 Sa	0258	19.7	600	25 Su	0231	19.5	594
	0847	0.6	18		0824	0.2	6
	1451	20.3	619		1428	20.6	628
	2107	-3.0	-91		2041	-2.8	-85
11 Su	0330	20.1	613	26 M	0303	20.6	628
	0922	0.1	3		0902	-1.2	-37
	1528	19.9	607		1509	20.9	637
	2137	-2.2	-67		2116	-2.7	-82
12 M	0359	20.1	613	27 Tu	0335	21.3	649
	0958	0.1	3		0941	-2.1	-64
	1605	19.1	582		1551	20.5	625
	2209	-1.0	-30		2154	-1.8	-55
13 Tu	0428	19.6	597	28 W	0407	21.4	652
	1033	0.5	15		1021	-2.4	-73
	1639	17.9	546		1636	19.4	591
	2241	0.6	18		2231	-0.4	-12
14 W	0455	18.9	576				
	1108	1.3	40				
	1716	16.4	500				
	2310	2.4	73				
15 Th	0524	17.9	546				
	1143	2.2	67				
	1756	14.7	448				
	2342	4.2	128				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0444	20.9	637	16 F	0438	18.0	549
	1106	-1.9	-58		1106	1.1	34
	1724	17.8	543		1729	15.0	457
	2311	1.4	43		2306	4.7	143
2 F	0524	19.9	607	17 Sa	0508	16.8	512
	1158	-0.9	-27		1143	2.4	73
	1820	15.8	482		1812	13.3	405
	2359	3.5	107		2341	6.2	189
3 Sa	0612	18.4	561	18 Su	0543	15.5	472
	1257	0.5	15		1228	3.7	113
	1929	13.9	424		1913	11.8	360
4 Su	0059	5.5	168	19 M	0027	7.7	235
	0711	16.7	509		0628	14.2	433
	1416	1.7	52		1336	4.7	143
	2103	12.9	393		2051	11.1	338
5 M	0222	6.9	210	20 Tu	0150	8.7	265
	0834	15.4	469		0745	13.2	402
	1553	1.9	58		1521	4.8	146
	2248	13.4	408		2245	11.7	357
6 Tu	0406	6.8	207	21 W	0342	8.6	262
	1014	15.3	466		0928	13.1	399
	1717	1.0	30		1648	3.8	116
					2343	13.2	402
7 W	0000	14.8	451	22 Th	0504	7.1	216
	0530	5.5	168		1054	14.3	436
	1136	16.2	494		1741	2.3	70
	1815	-0.1	-3				
8 Th	0047	16.4	500	23 F	0018	14.4	454
	0629	3.6	110		0557	4.9	149
	1235	17.4	530		1154	16.0	488
	1858	-1.0	-30		1821	0.8	24
9 F	0126	17.8	543	24 Sa	0050	16.8	512
	0711	1.9	58		0639	2.5	76
	1321	18.5	564		1242	17.8	543
	1935	-1.5	-46		1900	-0.5	-15
10 Sa	0158	18.9	576	25 Su	0119	18.6	567
	0749	0.5	15		0714	0.2	6
	1359	19.2	585		1328	19.3	588
	2008	-1.7	-52		1935	-1.4	-43
11 Su	0226	19.7	600	26 M	0151	20.2	616
	0825	-0.4	-12		0759	-1.9	-58
	1435	19.5	594		1410	20.4	622
	2038	-1.3	-40		2012	-1.7	-52
12 M	0254	20.1	613	27 Tu	0225	21.5	655
	0857	-1.0	-30		0838	-3.5	-107
	1508	19.4	591		1455	20.8	634
	2108	-0.6	-18		2050	-1.5	-46
13 Tu	0319	20.1	613	28 W	0300	22.1	674
	0929	-1.0	-30		0920	-4.3	-131
	1543	18.9	576		1538	20.5	625
	2137	0.4	12		2130	-0.7	-21
14 W	0346	19.7	600	29 Th	0337	22.0	671
	1002	-0.7	-21		1002	-4.3	-131
	1615	17.9	546		1625	19.4	591
	2207	1.7	52		2212	0.6	18
15 Th	0412	19.0	579	30 F	0418	21.2	646
	1033	0.1	3		1050	-3.4	-104
	1650	16.6	506		1716	17.8	543
	2238	3.1	94		2257	2.3	70
				31 Sa	0503	19.7	600
					1140	-1.9	-58
					1812	15.9	485
					2348	4.1	125

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0553	17.8	543	16 M	0516	15.4	469
	1241	-0.1	-3		1203	2.5	76
	1923	14.3	436		1856	12.6	384
2 M	0054	5.7	174	17 Tu	0015	7.3	223
	0659	15.9	485		0604	14.1	430
	1400	1.4	43		1305	3.5	107
	2051	13.6	415		2011	12.1	369
3 Tu	0223	6.5	198	18 W	0129	7.9	241
	0829	14.6	445		0720	13.1	399
	1531	2.0	61		1422	3.9	119
	2222	14.0	427		2131	12.5	381
4 W	0405	5.9	180	19 Th	0305	7.5	229
	1006	14.4	439		0853	13.0	396
	1651	1.7	52		1542	3.5	107
	2328	15.2	463		2233	13.7	418
5 Th	0518	4.4	134	20 F	0422	5.9	180
	1125	15.2	463		1017	13.8	421
	1746	1.1	34		1644	2.7	82
					2317	15.3	466
6 F	0015	16.5	503	21 Sa	0520	3.6	110
	0610	2.6	79		1122	15.3	466
	1221	15.3	467		1733	1.7	52
	1829	0.7	21		2357	17.2	524
7 Sa	0053	17.6	536	22 Su	0608	1.0	30
	0652	1.1	34		1218	16.9	515
	1303	17.2	524		1818	0.8	24
	1904	0.5	15				
8 Su	0120	18.5	564	23 M	0034	18.9	576
	0727	-0.2	-6		0651	-1.5	-46
	1341	17.9	546		1308	18.4	561
	1936	0.5	15		1900	0.2	6
9 M	0147	19.1	582	24 Tu	0111	20.5	625
	0801	-1.1	-34		0733	-3.6	-110
	1415	18.3	558		1354	19.5	594
	2006	0.8	24		1945	-0.1	-3
10 Tu	0215	19.5	594	25 W	0151	21.6	658
	0831	-1.6	-49		0817	-5.0	-152
	1450	18.4	561		1441	19.9	607
	2037	1.3	40		2027	0.1	3
11 W	0240	19.5	594	26 Th	0231	22.0	671
	0903	-1.7	-52		0901	-5.6	-171
	1522	18.0	549		1528	19.7	600
	2108	2.0	61		2111	0.6	18
12 Th	0307	19.2	585	27 F	0315	21.8	664
	0933	-1.4	-43		0949	-5.3	-162
	1557	17.3	527		1618	18.9	576
	2140	2.9	88		2157	1.5	46
13 F	0336	18.6	567	28 Sa	0400	20.8	634
	1005	-0.7	-21		1036	-4.2	-128
	1633	16.3	497		1711	17.7	539
	2212	4.0	122		2247	2.7	82
14 Sa	0407	17.7	539	29 Su	0450	19.2	585
	1039	0.3	9		1129	-2.6	-79
	1711	15.0	457		1806	16.4	500
	2247	5.1	155		2343	4.0	122
15 Su	0439	16.6	506	30 M	0545	17.3	527
	1116	1.4	43		1228	-0.8	-24
	1759	13.7	418		1913	15.2	463
	2324	6.3	192				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0049	5.0	152	16 W	0009	6.4	195
	0654	15.5	472		0556	14.4	439
	1336	0.9	27		1237	2.0	61
	2027	14.7	448		1929	13.6	415
2 W	0214	5.4	165	17 Th	0113	6.4	195
	0814	14.1	430		0701	13.5	411
	1453	1.9	58		1334	2.6	79
	2138	14.8	451		2028	14.0	427
3 Th	0340	4.8	146	18 F	0227	5.8	177
	0940	13.7	418		0819	13.1	399
	1603	2.4	73		1442	3.1	94
	2240	15.5	472		2124	14.8	451
4 F	0451	3.5	107	19 Sa	0339	4.3	131
	1059	14.1	430		0939	13.4	408
	1701	2.6	79		1547	3.1	94
	2327	16.2	494		2216	16.0	488
5 Sa	0546	2.1	64	20 Su	0443	2.2	67
	1154	14.8	451		1051	14.4	439
	1749	2.7	82		1645	2.9	88
					2304	17.5	533
6 Su	0005	17.0	518	21 M	0536	-0.1	-3
	0626	0.8	24		1154	15.8	482
	1242	15.6	475		1739	2.4	73
	1826	2.8	85		2349	19.0	579
7 M	0035	17.6	536	22 Tu	0626	-2.4	-73
	0701	-0.3	-9		1250	17.1	521
	1322	16.3	497		1831	2.0	61
	1900	2.8	85				
8 Tu	0104	18.1	552	23 W	0037	20.2	616
	0735	-1.1	-34		0714	-4.2	-128
	1359	16.8	512		1343	18.2	555
	1935	2.9	88		1920	1.6	49
9 W	0137	18.5	564	24 Th	0122	21.1	643
	0802	-1.6	-49		0801	-5.4	-165
	1433	17.0	518		1432	18.8	573
	2009	3.1	94		2009	1.4	43
10 Th	0206	18.6	567	25 F	0211	21.4	652
	0839	-1.8	-55		0848	-5.8	-177
	1508	17.0	518		1521	19.0	579
	2043	3.4	104		2057	1.5	46
11 F	0238	18.5	564	26 Sa	0258	21.2	646
	0912	-1.6	-49		0936	-5.5	-168
	1544	16.6	506		1610	18.6	567
	2118	3.9	119		2146	1.8	55
12 Sa	0310	18.1	552	27 Su	0349	20.3	619
	0946	-1.2	-37		1026	-4.5	-137
	1623	16.0	488		1703	18.0	549
	2155	4.5	137		2239	2.4	73
13 Su	0346	17.4	530	28 M	0442	18.9	576
	1023	-0.5	-15		1116	-3.1	-94
	1703	15.2	463		1755	17.2	524
	2234	5.2	158		2335	3.2	98
14 M	0421	16.5	503	29 Tu	0536	17.2	524
	1100	0.3	9		1209	-1.3	-40
	1748	14.4	439		1849	16.5	503
	2316	5.9	180				
15 Tu	0506	15.5	472	30 W	0036	3.8	116
	1145	1.1	34		0636	15.5	472
	1837	13.8	421		1305	0.4	12
					1943	15.9	485
				31 Th	0146	4.1	125
					0742	14.0	427
					1403	2.1	64
					2042	15.5	472

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0300	3.9	119	16 Sa	0149	3.9	119
	0900	13.1	399		0749	13.5	411
	1506	3.4	104		1353	2.9	88
	2137	15.5	472		2027	16.1	491
2 Sa	0410	3.2	98	17 Su	0259	2.9	88
	1016	12.9	393		0905	13.2	402
	1606	4.3	131		1455	3.8	116
	2225	15.7	479		2122	16.7	509
3 Su	0509	2.3	70	18 M	0406	1.4	43
	1125	13.3	405		1024	13.7	418
	1657	4.8	146		1604	4.2	128
	2309	16.0	488		2219	17.5	533
4 M	0554	1.3	40	19 Tu	0509	-0.5	-15
	1218	13.9	424		1136	14.7	448
	1744	5.0	152		1709	4.1	125
	2349	16.5	503		2317	18.5	564
5 Tu	0634	0.4	12	20 W	0607	-2.3	-70
	1304	14.7	448		1239	15.9	485
	1831	4.9	149		1809	3.6	110
6 W	0026	17.0	518	21 Th	0013	19.5	594
	0711	-0.4	-12		0700	-3.8	-116
	1343	15.4	469		1335	17.2	524
	1908	4.7	143		1904	2.9	88
7 Th	0103	17.5	533	22 F	0108	20.4	622
	0746	-1.1	-34		0751	-4.9	-149
	1419	15.9	485		1425	18.1	552
	1948	4.5	137		1957	2.2	67
8 F	0140	17.8	543	23 Sa	0159	20.9	637
	0822	-1.5	-46		0839	-5.4	-165
	1458	16.3	497		1513	18.7	570
	2025	4.3	131		2047	1.6	49
9 Sa	0217	18.0	549	24 Su	0251	20.8	634
	0857	-1.7	-52		0925	-5.3	-162
	1533	16.4	500		1558	18.9	576
	2102	4.2	128		2137	1.4	43
10 Su	0254	18.0	549	25 M	0340	20.3	619
	0933	-1.7	-52		1010	-4.5	-137
	1612	16.3	497		1644	18.8	573
	2141	4.3	131		2226	1.6	49
11 M	0333	17.6	536	26 Tu	0429	19.1	582
	1009	-1.4	-43		1054	-3.1	-94
	1650	16.1	491		1727	18.4	561
	2221	4.5	137		2316	2.0	61
12 Tu	0413	17.0	518	27 W	0519	17.6	536
	1045	-0.9	-27		1137	-1.4	-43
	1726	15.8	482		1811	17.7	539
	2303	4.6	140				
13 W	0455	16.2	494	28 Th	0008	2.6	79
	1134	-0.2	-6		0609	15.9	485
	1808	15.6	475		1222	0.6	18
	2353	4.7	143		1854	16.9	515
14 Th	0543	15.3	466	29 F	0104	3.2	98
	1206	0.8	24		0705	14.2	433
	1849	15.6	475		1307	2.6	79
					1939	16.1	491
15 F	0049	4.5	137	30 Sa	0208	3.6	110
	0641	14.3	436		0811	12.8	390
	1254	1.8	55		1359	4.4	134
	1935	15.7	479		2027	15.5	472

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SELDOVIA, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0313	3.6	110	16 M	0224	2.0	61
	0927	12.1	369		0841	13.1	399
	1458	5.8	177		1416	4.9	149
	2117	15.1	460		2038	16.9	515
2 M	0423	3.2	98	17 Tu	0338	1.3	40
	1048	12.1	369		1008	13.1	399
	1604	6.6	201		1535	5.7	174
	2211	15.0	457		2147	17.1	521
3 Tu	0522	2.5	76	18 W	0453	0.1	3
	1157	12.8	390		1130	14.1	430
	1707	6.8	207		1651	5.5	168
	2304	15.3	466		2259	17.8	543
4 W	0613	1.6	49	19 Th	0557	-1.4	-43
	1250	13.7	418		1237	15.5	472
	1802	6.5	198		1800	4.6	140
	2354	16.0	488				
5 Th	0655	0.6	18	20 F	0005	18.8	573
	1332	14.6	445		0653	-2.9	-88
	1847	5.9	180		1330	17.0	518
					1858	3.3	101
6 F	0039	16.7	509	21 Sa	0101	19.8	604
	0732	-0.4	-12		0743	-4.0	-122
	1409	15.5	472		1415	18.3	558
	1930	5.1	155		1949	2.1	64
7 Sa	0124	17.5	533	22 Su	0153	20.6	628
	0807	-1.2	-37		0828	-4.5	-137
	1444	16.3	497		1457	19.2	585
	2009	4.4	134		2038	1.1	34
8 Su	0204	18.1	552	23 M	0243	20.8	634
	0842	-1.8	-55		0908	-4.5	-137
	1518	16.9	515		1536	19.7	600
	2048	3.8	116		2123	0.5	15
9 M	0243	18.5	564	24 Tu	0328	20.5	625
	0916	-2.1	-64		0947	-3.7	-113
	1550	17.3	527		1615	19.8	604
	2125	3.3	101		2205	0.5	15
10 Tu	0322	18.5	564	25 W	0410	19.5	594
	0949	-2.1	-64		1026	-2.4	-73
	1621	17.6	536		1650	19.4	591
	2205	2.9	88		2249	0.8	24
11 W	0400	18.2	555	26 Th	0455	18.1	552
	1023	-1.7	-52		1101	-0.6	-18
	1657	17.7	539		1724	18.7	570
	2244	2.7	82		2332	1.6	49
12 Th	0442	17.5	533	27 F	0537	16.5	503
	1058	-0.8	-24		1137	1.4	43
	1729	17.7	539		1801	17.7	539
	2329	2.5	76				
13 F	0527	16.4	500	28 Sa	0016	2.5	76
	1137	0.4	12		0625	14.7	448
	1806	17.6	536		1217	3.5	107
					1836	16.6	506
14 Sa	0020	2.4	73	29 Su	0105	3.5	107
	0620	15.2	463		0718	13.1	399
	1220	1.9	58		1257	5.5	168
	1849	17.4	530		1918	15.5	472
15 Su	0115	2.3	70	30 M	0207	4.2	128
	0723	14.0	427		0832	11.9	363
	1313	3.5	107		1352	7.1	216
	1938	17.1	521		2008	14.6	445
				31 Tu	0329	4.5	137
					1006	11.5	351
					1511	8.1	247
					2115	14.2	433

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0451	4.0	122	16 Th	0446	0.9	27
	1144	12.2	372		1133	14.3	436
	1635	8.2	250		1851	6.2	189
	2227	14.4	439		2259	17.0	518
2 Th	0554	2.9	88	17 F	0554	-0.5	-15
	1237	13.4	408		1232	16.0	488
	1741	7.4	226		1800	4.6	140
	2333	15.3	466				
3 F	0639	1.6	49	18 Sa	0008	18.3	558
	1316	14.6	445		0647	-1.8	-55
	1831	6.3	192		1318	17.6	536
					1855	2.9	88
4 Sa	0027	16.5	503	19 Su	0100	19.5	594
	0714	0.3	9		0730	-2.8	-85
	1348	15.9	485		1357	19.0	579
	1914	5.0	152		1940	1.3	40
5 Su	0109	17.7	539	20 M	0148	20.4	622
	0746	-0.8	-24		0809	-3.2	-98
	1417	17.0	518		1432	20.0	610
	1952	3.7	113		2023	0.1	3
6 M	0149	18.8	573	21 Tu	0230	20.8	634
	0817	-1.7	-52		0844	-2.9	-88
	1449	18.1	552		1506	20.6	628
	2028	2.5	76		2102	-0.5	-15
7 Tu	0227	19.5	594	22 W	0309	20.5	625
	0850	-2.2	-67		0918	-2.2	-67
	1517	18.9	576		1536	20.6	628
	2104	1.5	46		2141	-0.5	-15
8 W	0305	19.8	604	23 Th	0349	19.8	604
	0922	-2.1	-64		0954	-0.9	-27
	1546	19.5	594		1607	20.2	616
	2141	0.8	24		2216	-0.1	-3
9 Th	0345	19.5	594	24 F	0426	18.5	564
	0956	-1.6	-49		1025	0.8	24
	1618	19.7	600		1636	19.4	591
	2220	0.4	12		2252	0.7	21
10 F	0426	18.8	573	25 Sa	0506	17.0	518
	1031	-0.5	-15		1058	2.6	79
	1650	19.6	597		1706	18.2	555
	2303	0.3	9		2329	1.9	58
11 Sa	0511	17.6	536	26 Su	0545	15.3	466
	1110	1.0	30		1132	4.6	140
	1727	19.2	585		1737	16.9	515
	2350	0.6	18				
12 Su	0603	16.0	488	27 M	0012	3.2	98
	1153	2.8	85		0636	13.5	411
	1809	18.4	561		1209	6.4	195
					1814	15.6	475
13 M	0044	1.2	37	28 Tu	0105	4.5	137
	0705	14.4	439		0744	12.1	369
	1245	4.7	143		1257	8.0	244
	1902	17.5	533		1905	14.4	439
14 Tu	0155	1.8	55	29 W	0224	5.4	165
	0827	13.2	402		0930	11.5	351
	1355	6.2	189		1422	9.1	277
	2009	16.6	506		2021	13.5	411
15 W	0321	1.8	55	30 Th	0414	5.1	155
	1006	13.1	399		1120	12.2	372
	1523	6.9	210		1611	8.9	271
	2135	16.4	500		2158	13.7	418
				31 F	0530	3.9	119
					1215	13.6	415
					1725	7.7	235
					2315	14.8	451

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0610	2.5	76	16 Su	0005	17.8	543
	1247	15.0	457		0629	-0.5	-15
	1813	6.1	186		1255	18.4	561
					1847	1.9	58
2 Su	0007	16.3	497	17 M	0055	19.0	579
	0645	1.1	34		0708	-1.1	-34
	1314	16.6	506		1330	19.6	597
	1852	4.3	131		1925	0.3	9
3 M	0050	17.9	546	18 Tu	0137	19.8	604
	0716	-0.2	-6		0743	-1.2	-37
	1343	18.0	549		1401	20.5	625
	1928	2.5	76		2004	-0.7	-21
4 Tu	0130	19.3	588	19 W	0215	20.2	616
	0748	-1.0	-30		0816	-0.8	-24
	1409	19.4	591		1430	20.9	637
	2004	0.8	24		2037	-1.3	-40
5 W	0205	20.2	616	20 Th	0251	20.1	613
	0820	-1.5	-46		0848	-0.1	-3
	1438	20.5	625		1457	20.9	637
	2039	-0.6	-18		2111	-1.3	-40
6 Th	0247	20.7	631	21 F	0325	19.5	594
	0853	-1.4	-43		0919	1.0	30
	1507	21.2	646		1525	20.4	622
	2115	-1.5	-46		2143	-0.8	-24
7 F	0329	20.5	625	22 Sa	0402	18.5	564
	0927	-0.7	-21		0949	2.4	73
	1541	21.4	652		1552	19.6	597
	2157	-1.9	-58		2215	0.1	3
8 Sa	0410	19.7	600	23 Su	0438	17.2	524
	1006	0.5	15		1021	3.9	119
	1615	21.0	640		1621	18.4	561
	2239	-1.6	-49		2250	1.3	40
9 Su	0458	18.3	558	24 M	0516	15.6	475
	1047	2.1	64		1054	5.5	168
	1654	20.2	616		1652	17.1	521
	2327	-0.7	-21		2329	2.7	82
10 M	0551	16.5	503	25 Tu	0604	14.0	427
	1132	3.9	119		1132	7.1	216
	1740	18.8	573		1727	15.7	479
11 Tu	0024	0.6	18	26 W	0012	4.2	128
	0656	14.7	448		0710	12.6	384
	1228	5.8	177		1224	8.5	259
	1836	17.2	524		1814	14.3	436
12 W	0136	1.8	55	27 Th	0126	5.3	162
	0823	13.6	415		0848	11.9	363
	1347	7.1	216		1350	9.4	287
	1957	15.9	485		1939	13.2	402
13 Th	0309	2.3	70	28 F	0311	5.5	168
	1006	13.9	424		1032	12.6	384
	1527	7.1	216		1542	9.0	274
	2134	15.6	475		2121	13.2	402
14 F	0437	1.6	49	29 Sa	0435	4.6	140
	1122	15.2	463		1125	13.9	424
	1656	5.8	177		1657	7.4	226
	2301	16.5	503		2245	14.3	436
15 Sa	0541	0.5	15	30 Su	0525	3.3	101
	1215	16.9	515		1200	15.5	472
	1757	3.8	116		1745	5.4	165
					2341	16.0	488

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height ft	Height cm
1	0502	2.1	64
M	1227	17.2	524
	1823	3.2	98
2	0026	17.6	536
Tu	0637	1.0	30
	1258	18.9	576
	1900	1.0	30
3	0108	19.1	582
W	0711	0.2	6
	1327	20.4	622
	1936	-1.0	-30
4	0149	20.2	616
Th	0748	-0.2	-6
	1359	21.6	658
	2015	-2.6	-79
5	0230	20.8	634
F	0823	-0.1	-3
	1432	22.3	680
	2053	-3.5	-107
6	0314	20.6	628
Sa	0904	0.5	15
	1508	22.3	680
	2135	-3.7	-113
7	0359	19.8	604
Su	0944	1.6	49
	1546	21.7	661
	2220	-3.0	-91
8	0444	18.5	564
M	1029	3.0	91
	1631	20.4	622
	2310	-1.7	-52
9	0543	16.8	512
Tu	1121	4.6	140
	1721	18.7	570
10	0009	0.0	0
W	0654	15.3	466
	1222	6.1	186
	1828	16.8	512
11	0121	1.5	46
Th	0817	14.6	445
	1349	6.9	210
	1952	15.4	469
12	0251	2.3	70
F	0945	15.0	457
	1527	6.4	195
	2131	15.1	460
13	0412	2.1	64
Sa	1053	16.1	491
	1648	4.7	143
	2253	15.9	485
14	0513	1.6	49
Su	1141	17.4	530
	1744	2.8	85
	2354	16.9	515
15	0602	1.2	37
M	1223	18.6	567
	1829	1.1	34
16	0042	17.9	546
Tu	0639	1.1	34
	1255	19.6	597
	1906	-0.3	-9
17	0122	18.6	567
W	0714	1.2	37
	1324	20.2	616
	1941	-1.2	-37
18	0159	19.0	579
Th	0745	1.5	46
	1351	20.5	625
	2014	-1.6	-49
19	0233	19.1	582
F	0818	2.1	64
	1420	20.4	622
	2045	-1.6	-49
20	0309	18.7	570
Sa	0850	2.8	85
	1449	20.0	610
	2117	-1.2	-37
21	0341	18.0	549
Su	0922	3.8	116
	1517	19.3	588
	2149	-0.4	-12
22	0418	17.0	518
M	0956	4.8	146
	1546	18.3	558
	2223	0.7	21
23	0458	15.8	482
Tu	1031	6.0	183
	1621	17.1	521
	2303	1.9	58
24	0545	14.5	442
W	1113	7.2	219
	1658	15.7	479
	2348	3.2	98
25	0643	13.4	408
Th	1206	8.2	250
	1751	14.4	439
26	0044	4.2	128
F	0758	13.0	396
	1321	8.8	268
	1905	13.3	405
27	0202	4.8	146
Sa	0918	13.3	405
	1455	8.3	253
	2035	13.0	396
28	0321	4.7	143
Su	1014	14.4	439
	1612	6.7	204
	2200	13.8	421
29	0422	4.1	125
M	1057	15.8	482
	1707	4.5	137
	2307	15.1	460
30	0509	3.2	98
Tu	1134	17.5	533
	1749	2.1	64
	2357	16.7	509
31	0554	2.4	73
W	1207	19.2	585
	1831	-0.3	-9

NOVEMBER

Day	Time	Height ft	Height cm
1	0047	18.2	555
Th	0637	1.8	55
	1245	20.7	631
	1911	-2.4	-73
2	0132	19.4	591
F	0719	1.4	43
	1322	21.9	668
	1953	-4.0	-122
3	0216	20.1	613
Sa	0801	1.4	43
	1402	22.5	686
	2034	-4.8	-146
4	0303	20.1	613
Su	0843	1.6	49
	1445	22.5	686
	2120	-4.8	-146
5	0351	19.6	597
M	0929	2.3	70
	1530	21.7	661
	2209	-4.0	-122
6	0441	18.6	567
Tu	1018	3.3	101
	1619	20.4	622
	2300	-2.6	-79
7	0539	17.5	533
W	1114	4.3	131
	1714	18.6	567
	2357	-0.9	-27
8	0643	16.4	500
Th	1220	5.3	162
	1819	16.7	509
9	0102	0.8	24
F	0752	15.9	485
	1339	5.7	174
	1939	15.2	463
10	0216	2.1	64
Sa	0903	16.0	488
	1506	5.2	158
	2107	14.5	442
11	0329	2.8	85
Su	1006	16.5	503
	1624	3.9	119
	2230	14.7	448
12	0432	3.2	98
M	1059	17.3	527
	1722	2.3	70
	2333	15.4	469
13	0523	3.4	104
Tu	1141	18.0	549
	1807	1.0	30
14	0026	16.2	494
W	0605	3.5	107
	1215	18.6	567
	1845	-0.1	-3
15	0108	16.9	515
Th	0642	3.6	110
	1247	19.0	579
	1920	-0.9	-27
16	0145	17.4	530
F	0719	3.8	116
	1319	19.3	588
	1952	-1.3	-40
17	0220	17.7	539
Sa	0754	3.9	119
	1349	19.4	591
	2025	-1.5	-46
18	0255	17.7	539
Su	0829	4.2	128
	1421	19.3	588
	2058	-1.3	-40
19	0330	17.4	530
M	0903	4.6	140
	1455	18.8	573
	2132	-0.8	-24
20	0407	16.9	515
Tu	0940	5.1	155
	1529	18.2	555
	2207	-0.1	-3
21	0446	16.1	491
W	1017	5.8	177
	1605	17.2	524
	2245	0.7	21
22	0532	15.4	469
Th	1100	6.5	198
	1647	16.1	491
	2327	1.7	52
23	0617	14.8	451
F	1151	7.0	213
	1735	15.0	457
24	0011	2.6	79
Sa	0709	14.5	442
	1251	7.2	219
	1836	13.9	424
25	0104	3.5	107
Su	0803	14.6	445
	1403	6.8	207
	1950	13.2	402
26	0206	4.2	128
M	0857	15.2	463
	1516	5.6	171
	2113	13.3	405
27	0314	4.5	137
Tu	0947	16.2	494
	1620	3.6	110
	2227	14.1	430
28	0416	4.5	137
W	1037	17.5	533
	1714	1.4	43
	2333	15.4	469
29	0512	4.1	125
Th	1123	18.9	576
	1805	-0.9	-27
30	0028	16.8	512
F	0605	3.5	107
	1210	20.3	619
	1851	-2.9	-88

DECEMBER

Day	Time	Height ft	Height cm
1	0119	18.1	552
Sa	0655	2.9	88
	1255	21.4	652
	1937	-4.4	-134
2	0209	19.0	579
Su	0743	2.5	76
	1345	22.0	671
	2025	-5.3	-162
3	0257	19.5	594
M	0831	2.2	67
	1433	22.1	674
	2111	-5.4	-165
4	0346	19.5	594
Tu	0921	2.2	67
	1522	21.6	658
	2159	-4.7	-143
5	0433	19.1	582
W	1012	2.5	76
	1613	20.4	622
	2247	-3.5	-107
6	0525	18.5	564
Th	1106	3.1	94
	1706	18.8	573
	2339	-1.8	-55
7	0617	17.8	543
F	1204	3.7	113
	1806	16.9	515
8	0032	0.1	3
Sa	0713	17.2	524
	1313	4.1	125
	1913	15.2	463
9	0128	2.0	61
Su	0808	16.7	509
	1427	4.1	125
	2028	13.9	424
10	0232	3.7	113
M	0905	16.5	503
	1542	3.6	110
	2151	13.4	408
11	0335	4.9	149
Tu	1000	16.5	503
	1648	2.7	82
	2307	13.7	418
12	0437	5.6	171
W	1051	16.6	506
	1741	1.7	52
13	0007	14.3	436
Th	0530	5.8	177
	1133	17.0	518
	1823	0.8	24
14	0055	15.1	460
F	0615	5.7	174
	1213	17.4	530
	1903	0.0	0
15	0137	15.9	485
Sa	0654	5.5	168
	1252	17.9	546
	1937	-0.7	-21
16	0213	16.5	503
Su	0737	5.1	155
	1327	18.3	558
	2012	-1.1	-34
17	0248	16.9	515
M	0815	4.8	146
	1406	18.6	567
	2046	-1.4	-43
18	0322	17.2	524
Tu	0852	4.6	140
	1443	18.6	567
	2120	-1.4	-43
19	0357	17.2	524
W	0928	4.6	140
	1520	18.4	561
	2153	-1.2	-37
20	0431	17.0	518
Th	1007	4.7	143
	1557	17.8	543
	2229	-0.6	-18
21	0506	16.8	512
F	1046	4.8	146
	1638	17.0	518
	2303	0.2	6
22	0543	16.5	503
Sa	1129	5.0	152
	1719	15.9	485
	2340	1.2	37
23	0620	16.3	497
Su	1217	5.0	152
	1811	14.8	451
24	0022	2.4	73
M	0702	16.3	497
	1315	4.7	143
	1910	13.7	418
25	0112	3.7	113
Tu	0749	16.3	497
	1420	4.1	125
	2027	13.1	399
26	0215	4.8	146
W	0843	16.6	506
	1532	2.9	88
	2151	13.1	399
27	0324	5.6	171
Th	0945	17.2	524
	1641	1.2	37
	2310	14.0	427
28	0437	5.6	171
F	1045	18.1	552
	1744	-0.7	-21
29	0018	15.4	469
Sa	0541	5.0	152
	1146	19.3	588
	1839	-2.6	-79
30	0114	16.9	515
Su	0640	4.0	122
	1243	20.4	622
	1928	-4.2	-128
31	0204	18.3	558
M	0733	2.9	88
	1337	21.4	652
	2017	-5.2	-158

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NIKISHKA, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1	0112	-1.7	-52	16	0145	0.6	18
M	0727	20.9	637	Tu	0759	21.2	646
	1335	3.3	101		1421	3.0	91
	1909	20.0	610		2013	18.1	552
2	0152	-0.5	-15	17	0226	2.8	85
Tu	0805	20.7	631	W	0841	20.1	613
	1426	3.2	98		1510	3.7	113
	2007	18.7	570		2114	16.4	500
3	0235	1.3	40	18	0308	5.2	158
W	0852	20.4	622	Th	0926	18.9	576
	1524	3.2	98		1612	4.5	137
	2116	17.4	530		2224	15.0	457
4	0326	3.4	104	19	0358	7.5	229
Th	0943	20.1	613	F	1020	17.7	539
	1631	3.0	91		1721	4.8	146
	2233	16.5	503		2343	14.4	439
5	0428	5.5	168	20	0509	9.3	283
F	1041	19.9	607	Sa	1122	17.0	518
	1744	2.5	76		1836	4.4	134
	2356	16.5	503				
6	0544	7.1	216	21	0102	14.8	451
Sa	1146	20.0	610	Su	0629	10.1	308
	1854	1.3	40		1227	15.9	515
					1942	3.3	101
7	0111	17.3	527	22	0211	15.8	482
Su	0700	7.6	232	M	0739	9.8	299
	1248	20.5	625		1326	17.3	527
	1958	-0.3	-9		2032	1.9	58
8	0215	18.5	564	23	0301	17.0	518
M	0806	7.2	219	Tu	0836	8.8	268
	1347	21.3	649		1415	18.2	555
	2053	-1.8	-55		2113	0.5	15
9	0311	19.9	607	24	0338	18.2	555
Tu	0901	6.2	189	W	0917	7.5	229
	1443	22.1	674		1457	19.3	588
	2142	-3.0	-91		2150	-0.8	-24
10	0357	21.1	643	25	0411	19.2	585
W	0952	5.1	155	Th	0957	5.9	180
	1533	22.8	695		1536	20.4	622
	2227	-3.7	-113		2225	-2.0	-61
11	0441	22.0	671	26	0443	20.3	619
Th	1038	3.9	119	F	1034	4.3	131
	1620	23.1	704		1611	21.4	652
	2309	-3.9	-119		2259	-2.9	-88
12	0522	22.5	686	27	0512	21.2	646
F	1122	3.0	91	Sa	1111	2.8	85
	1705	23.0	701		1650	22.1	674
	2349	-3.5	-107		2334	-3.3	-101
13	0602	22.8	695	28	0544	22.0	671
Sa	1206	2.4	73	Su	1150	1.5	46
	1749	22.4	683		1730	22.4	683
14	0027	-2.6	-79	29	0011	-3.2	-98
Su	0640	22.6	689	M	0616	22.5	686
	1250	2.2	67		1231	0.6	18
	1835	21.3	649		1811	22.0	671
15	0107	-1.3	-40	30	0047	-2.3	-70
M	0720	22.1	674	Tu	0651	22.6	689
	1333	2.4	73		1315	0.3	9
	1922	19.8	604		1859	21.1	643
				31	0125	-0.7	-21
				W	0725	22.4	683
					1402	0.4	12
					1952	19.7	600

FEBRUARY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1	0205	1.5	46	16	0215	5.5	168
Th	0807	21.7	661	F	0815	18.8	573
	1457	1.1	34		1516	3.6	110
	2055	17.9	546		2137	15.1	460
2	0253	4.1	125	17	0255	7.8	238
F	0855	20.7	631	Sa	0855	17.3	527
	1600	1.9	58		1622	4.7	143
	2212	16.5	503		2258	14.0	427
3	0356	6.7	204	18	0400	9.8	299
Sa	1000	19.5	594	Su	1006	16.0	488
	1718	2.3	70		1748	5.0	152
	2340	16.0	488				
4	0518	8.4	256	19	0026	14.1	430
Su	1117	18.8	573	M	0543	10.8	329
	1838	1.8	55		1141	15.5	472
					1905	4.1	125
5	0103	16.6	506	20	0142	15.1	460
M	0646	8.7	265	Tu	0710	10.1	308
	1238	19.0	579		1257	16.1	491
	1947	0.6	18		2003	2.6	79
6	0212	18.0	549	21	0232	16.5	503
Tu	0758	7.6	232	W	0808	8.5	259
	1348	19.9	607		1353	17.4	530
	2044	-0.9	-27		2046	1.0	30
7	0305	19.5	594	22	0312	17.9	546
W	0856	6.0	183	Th	0856	6.5	198
	1444	20.9	637		1440	18.9	576
	2131	-2.0	-61		2123	-0.6	-18
8	0347	20.9	637	23	0341	19.3	588
Th	0944	4.2	128	F	0933	4.3	131
	1533	21.9	668		1520	20.4	622
	2212	-2.8	-85		2157	-1.9	-58
9	0426	21.9	668	24	0410	20.7	631
F	1026	2.6	79	Sa	1013	2.1	64
	1614	22.4	683		1557	21.7	661
	2250	-3.0	-91		2232	-2.8	-85
10	0458	22.6	689	25	0439	22.0	671
Sa	1107	1.4	43	Su	1050	0.2	6
	1655	22.6	689		1636	22.7	692
	2326	-2.8	-85		2307	-3.1	-94
11	0533	23.0	701	26	0508	23.1	704
Su	1145	0.6	18	M	1129	-1.3	-40
	1733	22.2	677		1716	23.0	701
					2342	-2.7	-82
12	0001	-2.0	-61	27	0539	23.7	722
M	0605	22.9	698	Tu	1209	-2.2	-67
	1224	0.3	9		1800	22.7	692
	1814	21.4	652				
13	0034	-0.7	-21	28	0021	-1.7	-52
Tu	0637	22.4	683	W	0614	23.8	725
	1301	0.6	18		1251	-2.3	-70
	1856	20.2	616		1845	21.7	661
14	0109	1.1	34				
W	0709	21.6	658				
	1341	1.3	40				
	1938	18.6	567				
15	0141	3.2	98				
Th	0741	20.3	619				
	1424	2.3	70				
	2029	16.8	512				

MARCH

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1	0059	0.1	3	16	0106	4.1	125
Th	0650	23.3	710	F	0648	20.2	616
	1338	-1.7	-52		1346	1.2	37
	1938	20.1	613		2000	17.1	521
2	0143	2.5	76	17	0138	6.0	183
F	0733	22.2	677	Sa	0715	18.8	573
	1434	-0.4	-12		1433	2.6	79
	2042	18.2	555		2103	15.4	469
3	0231	5.0	152	18	0218	7.9	241
Sa	0821	20.5	625	Su	0746	17.3	527
	1538	1.1	34		1532	4.0	122
	2159	16.6	506		2220	14.3	436
4	0340	7.4	226	19	0319	9.5	290
Su	0931	18.7	570	M	0837	15.7	479
	1657	2.2	67		1654	4.7	143
	2330	16.1	491		2345	14.2	433
5	0509	8.8	268	20	0501	10.3	314
M	1108	17.6	536	Tu	1052	14.8	451
	1820	2.2	67		1815	4.3	131
6	0054	16.7	509	21	0100	15.0	457
Tu	0641	8.4	256	W	0633	9.4	287
	1238	17.8	543		1225	15.4	469
	1931	1.2	37		1918	3.1	94
7	0201	18.1	552	22	0147	16.4	500
W	0753	6.7	204	Th	0734	7.4	226
	1347	18.9	576		1326	16.8	512
	2027	0.1	3		2008	1.6	49
8	0248	19.6	597	23	0225	18.0	549
Th	0848	4.6	140	F	0824	5.0	152
	1440	20.0	610		1414	18.5	564
	2112	-0.9	-27		2046	0.2	6
9	0325	20.8	634	24	0259	19.5	597
F	0931	2.6	79	Sa	0907	2.4	73
	1525	21.0	640		1456	20.3	619
	2150	-1.4	-43		2125	-0.9	-27
10	0358	21.8	664	25	0328	21.2	646
Sa	1009	1.0	30	Su	0946	0.0	0
	1602	21.6	658		1538	21.7	661
	2226	-1.4	-43		2200	-1.5	-46
11	0428	22.4	683	26	0357	22.7	692
Su	1045	-0.1	-3	M	1026	-2.1	-64
	1639	21.8	664		1618	22.7	692
	2259	-1.1	-34		2239	-1.6	-49
12	0458	22.7	692	27	0429	23.8	725
M	1120	-0.8	-24	Tu	1105	-3.5	-107
	1716	21.6	658		1700	23.1	704
	2332	-0.3	-9		2317	-1.1	-34
13	0526	22.6	689	28	0505	24.4	744
Tu	1155	-1.0	-30	W	1147	-4.2	-128
	1752	21.1	643		1746	22.8	695
					2357	0.0	0
14	0003	0.9	27	29	0540	24.3	741
W	0555	22.2	677	Th	1232	-4.0	-122
	1231	-0.7	-21		1835	21.8	664
	1830	20.1	613				
15	0035	2.4	73	30	0040	1.7	52
Th	0622	21.3	649	F	0622	23.5	716
	1307	0.0	0		1321	-3.0	-91
	1912	18.7	570		1928	20.3	619
				31	0128	3.6	110
				Sa	0707	22.0	671
					1415	-1.3	-40
					2034	18.6	567

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NIKISHKA, ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Time	Height	
	h m	ft	cm	h m	ft	cm
1 Su	0223	5.7	174	0205	7.7	235
	0803	19.9	607	0714	17.4	530
	1519	0.6	18	1458	2.8	85
	2148	17.3	527	2145	15.3	466
2 M	0335	7.4	226	0306	8.7	265
	0924	18.0	549	0813	15.9	485
	1636	2.0	61	1605	3.7	113
	2311	16.9	515	2258	15.2	463
3 Tu	0459	8.0	244	0430	8.9	271
	1102	17.0	518	1013	15.0	457
	1755	2.4	73	1719	3.9	119
4 W	0027	17.5	533	0001	15.8	482
	0625	7.1	216	0550	7.9	241
	1228	17.2	524	1142	15.3	466
	1905	2.0	61	1825	3.4	104
5 Th	0124	18.6	567	0052	17.0	518
	0734	5.2	158	0657	6.0	183
	1334	18.1	552	1249	16.6	506
	2001	1.4	43	1918	2.6	79
6 F	0214	19.8	604	0132	18.5	564
	0827	3.2	98	0747	3.5	107
	1427	19.1	582	1342	18.2	555
	2044	0.9	27	2006	1.7	52
7 Sa	0253	20.7	631	0209	20.1	613
	0909	1.4	43	0835	0.9	27
	1509	19.9	607	1432	19.8	604
	2124	0.8	24	2048	1.1	34
8 Su	0325	21.4	652	0243	21.7	661
	0947	0.0	0	0918	-1.5	-46
	1546	20.4	622	1515	21.2	646
	2158	1.0	30	2130	0.7	21
9 M	0353	21.8	664	0318	23.1	704
	1023	-0.9	-27	1002	-3.4	-104
	1621	20.7	631	1600	22.2	677
	2230	1.4	43	2212	0.8	24
10 Tu	0421	22.0	671	0355	24.2	738
	1056	-1.5	-46	1045	-4.7	-143
	1658	20.7	631	1647	22.6	689
	2303	2.1	64	2255	1.2	37
11 W	0448	21.9	668	0434	24.6	750
	1130	-1.6	-49	1130	-5.1	-155
	1734	20.4	622	1736	22.5	686
	2335	3.0	91	2339	2.0	61
12 Th	0516	21.5	655	0516	24.3	741
	1205	-1.3	-40	1217	-4.7	-143
	1811	19.7	600	1826	21.7	661
13 F	0008	4.1	125	0027	3.1	94
	0842	20.8	634	0602	23.2	707
	1240	-0.7	-21	1307	-3.5	-107
	1853	18.7	570	1922	20.6	628
14 Sa	0043	5.3	162	0117	4.4	134
	0611	19.9	607	0653	21.6	658
	1319	0.3	9	1400	-1.9	-58
	1941	17.4	530	2023	19.5	594
15 Su	0120	6.5	198	0218	5.6	171
	0640	18.7	570	0759	19.6	597
	1405	1.6	49	1500	0.0	0
	2037	16.2	494	2132	18.6	567

MAY

Day	Time	Height		Time	Height	
	h m	ft	cm	h m	ft	cm
1 Tu	0324	6.4	195	0919	17.8	543
	1607	1.6	49	2242	18.3	558
2 W	0442	6.5	198	1043	16.8	512
	1717	2.6	79	2347	18.5	564
3 Th	0559	5.6	171	1204	16.8	512
	1825	3.1	94			
4 F	0045	19.1	582	0708	4.1	125
	1308	17.2	524	1923	3.2	98
5 Sa	0131	19.7	600	0801	2.4	73
	1403	17.9	546	2009	3.3	101
6 Su	0212	20.3	619	0846	1.0	30
	1448	18.6	567	2051	3.6	110
7 M	0246	20.7	631	0924	-0.1	-3
	1528	19.2	585	2128	3.9	119
8 Tu	0317	20.9	637	1000	-0.9	-27
	1605	19.6	597	2203	4.2	128
9 W	0345	21.0	640	1034	-1.4	-43
	1644	19.8	604	2238	4.7	143
10 Th	0416	21.0	640	1110	-1.5	-46
	1720	19.7	600	2314	5.1	155
11 F	0445	20.7	631	1146	-1.4	-43
	1800	19.3	588	2349	5.6	171
12 Sa	0515	20.3	619	1222	-1.0	-30
	1841	18.8	573			
13 Su	0027	6.0	183	0547	19.7	600
	1301	-0.4	-12	1925	18.1	552
14 M	0109	6.5	198	0624	18.8	573
	1344	0.4	12	2015	17.4	530
15 Tu	0157	6.9	210	0709	17.7	539
	1429	1.3	40	2108	16.9	515
16 W	0252	7.2	219	0811	16.6	506
	1523	2.3	70	2207	16.8	512
17 Th	0359	7.0	213	0937	15.7	479
	1623	3.1	94	2302	17.2	524
18 F	0507	6.1	186	1102	15.7	479
	1725	3.6	110	2353	18.0	549
19 Sa	0613	4.5	137	1212	16.5	503
	1825	3.7	113			
20 Su	0039	19.2	585	0713	2.3	70
	1313	17.7	539	1921	3.7	113
21 M	0121	20.6	628	0806	0.0	0
	1408	19.1	582	2012	3.5	107
22 Tu	0203	22.0	671	0853	-2.1	-64
	1458	20.4	622	2101	3.4	104
23 W	0244	23.1	704	0941	-3.7	-113
	1547	21.4	652	2150	3.3	101
24 Th	0328	23.9	728	1029	-4.8	-146
	1636	21.9	668	2237	3.3	101
25 F	0413	24.2	738	1116	-5.1	-155
	1725	22.1	674	2325	3.4	104
26 Sa	0459	23.9	728	1203	-4.7	-143
	1816	21.8	664			
27 Su	0016	3.7	113	0552	22.9	698
	1253	-3.7	-113	1909	21.3	649
28 M	0107	4.1	125	0648	21.5	655
	1343	-2.3	-70	2005	20.7	631
29 Tu	0205	4.5	137	0749	19.8	604
	1437	-0.5	-15	2103	20.0	610
30 W	0306	4.9	149	0902	18.2	555
	1532	1.3	40	2201	19.6	597
31 Th	0411	5.0	152	1014	16.9	515
	1633	3.0	91	2258	19.3	588

JUNE

Day	Time	Height		Time	Height	
	h m	ft	cm	h m	ft	cm
1 F	0521	4.6	140	0428	4.2	128
	1126	16.3	497	1024	16.2	494
	1733	4.4	134	1633	3.9	119
	2354	19.2	585	2255	19.1	582
2 Sa	0628	3.7	113	0537	3.2	98
	1233	16.3	497	1138	16.3	497
	1835	5.4	165	1736	5.1	155
				2348	19.7	600
3 Su	0044	19.3	588	0642	1.7	52
	0729	2.5	76	1247	17.1	521
	1334	16.7	509	1844	5.8	177
	1931	6.0	183			
4 M	0129	19.5	594	0038	20.6	628
	0817	1.4	43	0742	0.0	0
	1427	17.4	530	1351	18.2	555
	2019	6.3	192	1945	5.9	180
5 Tu	0208	19.6	597	0131	21.6	658
	0901	0.4	12	0836	-1.8	-55
	1512	18.0	549	1448	19.4	591
	2101	6.5	198	2043	5.6	171
6 W	0246	19.8	604	0222	22.5	686
	0939	-0.3	-9	0928	-3.3	-101
	1554	18.6	567	1541	20.6	628
	2141	6.5	198	2136	4.9	149
7 Th	0318	20.0	610	0312	23.2	707
	1016	-0.9	-27	1016	-4.2	-128
	1631	19.0	579	1629	21.4	652
	2219	6.4	195	2226	4.2	128
8 F	0354	20.2	616	0402	23.6	719
	1052	-1.3	-40	1103	-4.7	-143
	1710	19.3	588	1715	22.0	671
	2257	6.2	189	2314	3.6	110
9 Sa	0426	20.2	616	0454	23.5	716
	1128	-1.5	-46	1150	-4.5	-137
	1749	19.3	588	1803	22.2	677
	2336	5.9	180			
10 Su	0501	20.2	616	0003	3.1	94
	1206	-1.6	-49	0544	22.9	698
	1827	19.3	588	1234	-3.7	-113
				1850	22.1	674
11 M	0014	5.7	174	0051	2.9	88
	0536	19.9	607	0635	21.7	661
	1242	-1.4	-43	1319	-2.4	-73
	1904	19.1	582	1936	21.8	664
12 Tu	0056	5.4	165	0144	2.9	88
	0617	19.4	591	0732	20.3	619
	1321	-0.9	-27	1405	-0.7	-21
	1946	18.9	576	2023	21.1	643
13 W	0141	5.2	158	0237	3.2	98
	0704	18.7	570	0831	18.6	567
	1400	0.0	0	1452	1.4	43
	2029	18.8	573	2114	20.4	622
14 Th	0229	5.1	155	0333	3.7	113
	0800	17.7	539	0935	17.0	518
	1445	1.1	34	1542	3.6	110
	2114	18.7	570	2204	19.5	594
15 F	0326	4.8	146	0435	4.0	122
	0906	16.8	512	1045	15.9	485
	1535	2.5	76	1637	5.7	174
	2201	18.8	573	2300	18.8	573

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NIKISHKA, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 Su	0543	3.9	119	16 M	0504	2.5	76
	1156	15.4	469		1113	16.1	491
	1742	7.3	223		1657	6.6	201
	2353	18.3	558		2304	19.6	597
2 M	0652	3.3	101	17 Tu	0617	1.7	52
	1305	15.6	475		1233	16.5	503
	1846	8.3	253		1817	7.6	232
3 Tu	0047	18.2	555	18 W	0012	19.9	607
	0750	2.4	73		0723	0.4	12
	1406	16.3	497		1342	17.5	533
	1947	8.5	259		1931	7.4	226
4 W	0137	18.3	558	19 Th	0116	20.6	628
	0839	1.4	43		0824	-1.1	-34
	1459	17.2	524		1441	18.9	576
	2040	8.2	250		2032	6.5	198
5 Th	0222	18.7	570	20 F	0214	21.5	655
	0920	0.4	12		0917	-2.6	-79
	1541	18.0	549		1533	20.2	616
	2123	7.6	232		2126	5.1	155
6 F	0301	19.2	585	21 Sa	0309	22.5	686
	0958	-0.5	-15		1004	-3.6	-110
	1620	18.7	570		1618	21.4	652
	2203	6.8	207		2214	3.7	113
7 Sa	0338	19.7	600	22 Su	0358	23.1	704
	1034	-1.3	-40		1048	-4.1	-125
	1656	19.3	588		1700	22.2	677
	2241	5.9	180		2302	2.5	76
8 Su	0414	20.2	616	23 M	0445	23.2	707
	1110	-1.9	-58		1129	-4.0	-122
	1728	19.8	604		1739	22.7	692
	2318	5.0	152		2345	1.6	49
9 M	0449	20.6	628	24 Tu	0531	22.9	698
	1145	-2.2	-67		1210	-3.2	-98
	1800	20.1	613		1819	22.8	695
	2357	4.1	125				
10 Tu	0529	20.7	631	25 W	0030	1.2	37
	1218	-2.2	-67		0618	22.0	671
	1835	20.4	622		1249	-2.0	-61
					1858	22.4	683
11 W	0036	3.3	101	26 Th	0115	1.2	37
	0606	20.5	625		0707	20.6	628
	1253	-1.8	-55		1328	-0.2	-6
	1907	20.6	628		1938	21.7	661
12 Th	0117	2.8	85	27 F	0200	1.7	52
	0653	19.9	607		0757	18.9	576
	1332	-0.8	-24		1409	2.0	61
	1944	20.6	628		2021	20.6	628
13 F	0202	2.6	79	28 Sa	0250	2.6	79
	0744	18.9	576		0854	17.2	524
	1410	0.7	21		1449	4.4	134
	2021	20.4	622		2103	19.3	588
14 Sa	0253	2.6	79	29 Su	0348	3.6	110
	0842	17.7	539		1001	15.6	475
	1455	2.6	79		1540	6.8	207
	2106	20.1	613		2158	18.0	549
15 Su	0354	2.6	79	30 M	0454	4.3	131
	0953	16.6	506		1117	14.8	451
	1548	4.7	143		1649	8.8	268
	2159	19.7	600		2258	17.0	518
				31 Tu	0609	4.2	128
					1236	14.8	451
					1809	9.8	299

AUGUST

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 W	0009	16.6	506	16 Th	0002	18.7	570
	0721	3.4	104		0713	1.0	30
	1349	15.7	479		1337	17.5	533
	1923	9.7	296		1923	7.6	232
2 Th	0113	16.9	515	17 F	0116	19.5	594
	0816	2.2	67		0814	-0.5	-15
	1443	16.7	509		1435	19.0	579
	2019	8.7	265		2027	5.9	180
3 F	0205	17.7	539	18 Sa	0217	20.8	634
	0900	0.9	27		0904	-1.8	-55
	1523	17.8	543		1520	20.5	625
	2104	7.4	226		2117	3.9	119
4 Sa	0248	18.7	570	19 Su	0307	21.9	668
	0938	-0.3	-9		0948	-2.7	-82
	1557	18.8	573		1559	21.7	661
	2144	5.9	180		2202	2.2	67
5 Su	0326	19.7	600	20 M	0352	22.6	689
	1010	-1.3	-40		1027	-3.0	-91
	1628	19.7	600		1634	22.5	686
	2220	4.4	134		2244	0.8	24
6 M	0401	20.6	628	21 Tu	0433	22.9	698
	1044	-2.1	-64		1106	-2.8	-85
	1657	20.5	625		1708	23.0	701
	2257	2.9	88		2324	-0.1	-3
7 Tu	0437	21.3	649	22 W	0515	22.6	689
	1118	-2.6	-79		1141	-2.0	-61
	1726	21.2	646		1742	23.1	704
	2333	1.6	49				
8 W	0514	21.7	661	23 Th	0003	-0.5	-15
	1151	-2.5	-76		0555	21.9	668
	1755	21.8	664		1216	-0.7	-21
					1814	22.6	689
9 Th	0011	0.7	21	24 F	0042	-0.2	-6
	0552	21.6	658		0637	20.7	631
	1224	-1.9	-58		1251	1.0	30
	1827	22.1	674		1848	21.8	664
10 F	0051	0.2	6	25 Sa	0124	0.5	15
	0637	20.9	637		0724	19.1	582
	1301	-0.6	-18		1328	3.1	94
	1859	22.1	674		1922	20.5	625
11 Sa	0135	0.2	6	26 Su	0207	1.7	52
	0725	19.7	600		0815	17.4	530
	1340	1.2	37		1405	5.4	165
	1936	21.6	658		2000	18.9	576
12 Su	0226	0.7	21	27 M	0300	3.1	94
	0821	18.2	555		0919	15.7	479
	1423	3.5	107		1450	7.6	232
	2017	20.7	631		2045	17.3	527
13 M	0326	1.5	46	28 Tu	0405	4.4	134
	0935	16.7	509		1041	14.6	445
	1519	5.9	180		1559	9.6	293
	2119	19.6	597		2159	15.8	482
14 Tu	0438	2.1	64	29 W	0525	4.9	149
	1101	15.9	485		1207	14.5	442
	1638	7.9	241		1732	10.4	317
	2236	18.7	570		2332	15.3	466
15 W	0601	2.0	61	30 Th	0646	4.2	128
	1224	16.3	497		1321	15.4	469
	1807	8.5	259		1857	9.8	299
				31 F	0048	15.9	485
					0747	2.9	88
					1414	16.6	506
					1955	8.2	250

SEPTEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 Sa	0147	17.1	521	16 Su	0214	20.2	616
	0831	1.5	46		0846	-0.7	-21
	1453	17.9	546		1456	20.9	637
	2040	6.3	192		2104	2.3	70
2 Su	0230	18.5	564	17 M	0301	21.3	649
	0907	0.1	3		0926	-1.2	-37
	1522	19.1	582		1531	22.0	671
	2118	4.3	131		2145	0.5	15
3 M	0307	19.8	604	18 Tu	0341	22.0	671
	0941	-1.0	-30		1002	-1.2	-37
	1550	20.3	619		1603	22.7	692
	2154	2.3	70		2224	-0.7	-21
4 Tu	0341	21.0	640	19 W	0418	22.2	677
	1013	-1.7	-52		1038	-0.8	-24
	1618	21.4	652		1633	23.0	701
	2231	0.5	15		2300	-1.4	-43
5 W	0418	22.0	671	20 Th	0456	22.1	674
	1047	-2.1	-64		1112	0.1	3
	1645	22.4	683		1703	22.9	698
	2307	-1.0	-30		2336	-1.5	-46
6 Th	0455	22.4	683	21 F	0534	21.5	655
	1121	-1.8	-55		1145	1.3	40
	1714	23.1	704		1731	22.5	686
	2346	-1.9	-58				
7 F	0536	22.3	680	22 Sa	0013	-1.1	-34
	1155	-1.0	-30		0613	20.6	628
	1745	23.4	713		1219	2.8	85
					1800	21.5	655
8 Sa	0027	-2.2	-67	23 Su	0050	-0.3	-9
	0619	21.6	658		0655	19.2	585
	1235	0.5	15		1251	4.5	137
	1819	23.1	704		1832	20.3	619
9 Su	0112	-1.8	-55	24 M	0130	1.0	30
	0709	20.3	619		0746	17.6	536
	1315	2.5	76		1330	6.3	192
	1858	22.2	677		1959	18.8	573
10 M	0202	-0.7	-21	25 Tu	0217	2.5	76
	0809	18.6	567		0850	16.0	488
	1405	4.7	143		1413	8.2	250
	1946	20.7	631		1933	17.0	518
11 Tu	0303	0.8	24	26 W	0318	4.0	122
	0922	17.0	518		1009	14.9	454
	1506	7.0	213		1522	9.7	296
	2051	19.0	579		2039	15.3	466
12 W	0420	2.0	61	27 Th	0436	4.8	146
	1052	16.3	497		1131	14.8	451
	1632	8.4	256		1656	10.2	311
	2228	17.7	539		2253	14.6	445
13 Th	0542	2.2	67	28 F	0557	4.6	140
	1215	16.8	512		1241	15.5	472
	1803	8.2	250		1820	9.2	280
14 F	0001	17.8	543	29 Sa	0017	15.2	463
	0657	1.5	46		0701	3.6	110
	1324	18.1	552		1329	16.7	509
	1919	6.6	201		1921	7.3	223
15 Sa	0116	18.9	576	30 Su	0118	16.6	506
	0758	0.3	9		0750	2.4	73
	1416	19.6	597		1408	18.1	552
	2016	4.4	134		2008	5.0	152

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NIKISHKA, ALASKA, 1990

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0203	18.1	552	16	0248	20.3	619
M	0829	1.2	37	Tu	0859	1.2	37
	1438	19.5	594		1459	22.0	671
	2048	2.6	79		2124	-0.4	-12
2	0240	19.7	600	17	0325	20.9	637
Tu	0904	0.2	6	W	0936	1.4	43
	1507	21.0	640		1529	22.4	683
	2126	0.4	12		2202	-1.4	-43
3	0320	21.1	643	18	0403	21.2	646
W	0939	-0.3	-9	Th	1011	1.9	58
	1536	22.3	680		1557	22.6	689
	2203	-1.6	-49		2238	-1.8	-55
4	0357	22.2	677	19	0439	21.3	649
Th	1016	-0.5	-15	F	1043	2.7	82
	1605	23.5	716		1626	22.4	683
	2243	-3.1	-94		2313	-1.8	-55
5	0437	22.7	692	20	0515	20.9	637
F	1053	-0.1	-3	Sa	1118	3.6	110
	1637	24.2	738		1656	21.9	668
	2322	-3.9	-119		2347	-1.4	-43
6	0519	22.7	692	21	0556	20.3	619
Sa	1131	0.7	21	Su	1152	4.6	140
	1711	24.3	741		1723	21.2	646
7	0006	-3.8	-116	22	0024	-0.7	-21
Su	0608	21.9	668	M	0636	19.3	588
	1214	2.1	64		1230	5.8	177
	1750	23.7	722		1754	20.1	613
8	0053	-3.0	-91	23	0104	0.4	12
M	0659	20.7	631	Tu	0725	18.0	549
	1259	3.8	116		1307	7.0	213
	1834	22.3	680		1822	18.8	573
9	0146	-1.6	-49	24	0149	1.7	52
Tu	0802	19.1	582	W	0821	16.8	512
	1354	5.6	171		1354	8.1	247
	1927	20.4	622		1901	17.3	527
10	0249	0.2	6	25	0242	3.0	91
W	0915	17.8	543	Th	0930	15.9	485
	1503	7.2	219		1458	9.0	274
	2045	18.4	561		2000	15.7	479
11	0401	1.7	52	26	0345	4.0	122
Th	1037	17.4	530	F	1041	15.7	479
	1625	7.8	238		1617	9.1	277
	2226	17.3	527		2203	14.7	448
12	0518	2.4	73	27	0456	4.5	137
F	1153	17.9	546	Sa	1144	16.1	491
	1751	7.0	213		1736	8.2	250
	2356	17.4	530		2331	15.0	457
13	0631	2.2	67	28	0602	4.2	128
Sa	1257	18.9	576	Su	1233	17.1	521
	1905	5.1	155		1841	6.3	192
14	0106	18.4	561	29	0036	16.1	491
Su	0731	1.7	52	M	0657	3.6	110
	1347	20.2	616		1316	18.5	564
	2001	3.0	91		1931	4.0	122
15	0203	19.4	591	30	0129	17.6	536
M	0819	1.3	40	Tu	0745	2.9	88
	1424	21.2	646		1350	19.9	607
	2048	1.0	30		2016	1.5	46
				31	0214	19.2	585
				W	0827	2.3	70
					1422	21.5	655
					2059	-0.8	-24

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0257	20.7	631	16	0351	20.1	613
Th	0907	1.9	58	F	0946	4.8	146
	1454	22.9	698		1528	21.6	658
	2139	-2.8	-85		2218	-1.5	-46
2	0341	21.9	668	17	0427	20.4	622
F	0946	1.8	55	Sa	1023	5.1	155
	1531	24.0	732		1600	21.5	655
	2221	-4.2	-128		2254	-1.6	-49
3	0423	22.5	686	18	0506	20.3	619
Sa	1029	2.0	61	Su	1100	5.5	168
	1606	24.7	753		1631	21.2	646
	2305	-4.8	-146		2329	-1.4	-43
4	0510	22.6	689	19	0545	20.1	613
Su	1113	2.6	79	M	1136	5.9	180
	1647	24.6	750		1701	20.7	631
	2350	-4.7	-143				
5	0558	22.1	674	20	0006	-1.0	-30
M	1200	3.4	104	Tu	0624	19.5	594
	1731	23.8	725		1214	6.3	192
					1733	20.0	610
6	0039	-3.8	-116	21	0045	-0.3	-9
Tu	0651	21.2	646	W	0709	18.8	573
	1251	4.4	134		1256	6.8	207
	1822	22.4	683		1811	19.1	582
7	0133	-2.3	-70	22	0125	0.6	18
W	0752	20.2	616	Th	0757	18.1	552
	1349	5.4	165		1341	7.2	219
	1925	20.5	625		1851	17.9	546
8	0229	-0.5	-15	23	0207	1.6	49
Th	0858	19.3	588	F	0847	17.4	530
	1454	6.2	189		1434	7.4	226
	2041	18.6	567		1948	16.6	506
9	0335	1.3	40	24	0258	2.7	82
F	1008	18.8	573	Sa	0943	17.1	521
	1608	6.4	195		1535	7.4	226
	2210	17.3	527		2111	15.6	475
10	0443	2.6	79	25	0353	3.7	113
Sa	1117	19.0	579	Su	1038	17.3	527
	1726	5.6	171		1644	6.7	204
	2333	17.1	521		2238	15.2	463
11	0552	3.4	104	26	0456	4.5	137
Su	1215	19.5	594	M	1129	17.9	546
	1838	4.1	125		1752	5.3	162
					2351	15.8	482
12	0044	17.5	533	27	0559	4.9	149
M	0654	3.7	113	Tu	1215	18.9	576
	1305	20.2	616		1852	3.3	101
	1937	2.4	73				
13	0142	18.3	558	28	0054	16.9	515
Tu	0746	3.9	119	W	0657	5.0	152
	1347	20.8	634		1257	20.1	613
	2024	0.8	24		1945	1.1	34
14	0232	19.0	579	29	0148	18.4	561
W	0832	4.1	125	Th	0748	4.8	146
	1424	21.3	649		1339	21.5	655
	2104	-0.3	-9		2033	-1.1	-34
15	0312	19.7	600	30	0240	19.9	607
Th	0910	4.4	134	F	0838	4.5	137
	1459	21.5	655		1422	22.9	698
	2141	-1.1	-34		2120	-3.0	-91

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0326	21.1	643	16	0421	19.7	600
Sa	0925	4.1	125	Su	1009	6.7	204
	1504	23.9	728		1544	20.5	625
	2206	-4.3	-131		2239	-1.3	-40
2	0413	22.0	671	17	0458	20.0	610
Su	1013	3.8	116	M	1046	6.4	195
	1548	24.5	747		1616	20.6	628
	2251	-5.0	-152		2315	-1.5	-46
3	0502	22.4	683	18	0533	20.1	613
M	1101	3.6	110	Tu	1123	6.0	183
	1635	24.5	747		1651	20.6	628
	2338	-5.0	-152		2350	-1.5	-46
4	0550	22.5	686	19	0611	20.1	613
Tu	1150	3.6	110	W	1200	5.6	171
	1725	23.9	728		1727	20.3	619
5	0027	-4.2	-128	20	0026	-1.3	-40
W	0642	22.1	674	Th	0647	19.9	607
	1242	3.7	113		1240	5.4	165
	1819	22.7	692		1805	19.8	604
6	0115	-2.9	-88	21	0101	-0.7	-21
Th	0735	21.6	658	F	0722	19.6	597
	1336	4.1	125		1320	5.2	158
	1919	21.0	640		1843	19.0	579
7	0207	-1.2	-37	22	0138	0.1	3
F	0829	20.9	637	Sa	0800	19.3	588
	1436	4.4	134		1407	5.1	155
	2026	19.2	585		1933	18.0	549
8	0301	0.9	27	23	0215	1.4	43
Sa	0927	20.3	619	Su	0842	19.0	579
	1539	4.7	143		1455	5.0	152
	2139	17.6	536		2033	16.8	512
9	0401	2.9	88	24	0258	2.9	88
Su	1025	19.8	604	M	0927	18.8	573
	1651	4.5	137		1555	4.8	146
	2256	16.7	509		2145	15.9	485
10	0502	4.7	143	25	0353	4.6	140
M	1124	19.6	597	Tu	1017	18.9	576
	1800	3.9	119		1704	4.2	128
					2308	15.6	475
11	0009	16.5	503	26	0455	6.0	183
Tu	0607	6.0	183	W	1113	19.2	585
	1220	19.6	597		1813	2.9	88
	1905	2.8	85				
12	0116	16.9	515	27	0023	16.2	494
W	0707	6.7	204	Th	0609	6.9	210
	1308	19.7	600		1209	19.9	607
	2001	1.6	49		1918	1.2	37
13	0212	17.6	536	28	0127	17.4	530
Th	0801	7.0	213	F	0718	7.1	216
	1353	19.9	607		1305	20.9	637
	2046	0.6	18		2014	-0.7	-21
14	0301	18.4	561	29	0227	18.9	576
F	0848	7.1	216	Sa	0819	6.5	198
	1432	20.1	613		1358	22.1	674
	2125	-0.2	-6		2105	-2.5	-76
15	0344	19.1	582	30	0320	20.3	619
Sa	0930	6.9	210	Su	0912	5.6	171
	1509	20.3	619		1451	23.2	707
	2203	-0.8	-24		2155	-3.9	-119
				31	0407	21.6	658
				M	1003	4.5	137
					1542	23.9	728
					2240	-4.8	-146

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ANCHORAGE, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm
1 M	0411	-1.4	-43
	1002	28.7	875
	1632	3.7	113
	2157	27.8	847
2 Tu	0448	-0.7	-21
	1037	28.9	881
	1719	3.2	98
	2243	27.0	823
3 W	0529	0.6	18
	1120	29.1	887
	1809	2.7	82
	2338	26.0	792
4 Th	0615	2.5	76
	1205	28.9	881
	1908	2.2	67
5 F	0042	24.9	759
	0711	4.8	146
	1307	28.4	866
	2021	1.5	46
6 Sa	0212	24.2	738
	0823	6.7	204
	1418	28.1	856
	2135	0.6	18
7 Su	0359	25.0	762
	0939	7.4	226
	1529	28.2	860
	2254	-0.5	-15
8 M	0510	26.6	811
	1052	7.2	219
	1636	28.8	878
9 Tu	0003	-1.9	-58
	0607	27.9	850
	1206	6.3	192
	1732	29.5	899
10 W	0059	-3.2	-98
	0656	28.8	878
	1304	5.0	152
	1822	30.3	924
11 Th	0147	-3.7	-113
	0737	29.2	890
	1352	3.8	116
	1909	30.8	939
12 F	0229	-3.7	-113
	0813	29.5	899
	1437	2.9	88
	1955	30.8	939
13 Sa	0306	-3.0	-91
	0849	29.7	905
	1518	2.5	76
	2038	30.2	920
14 Su	0340	-2.1	-64
	0921	29.8	908
	1558	2.5	76
	2121	29.1	887
15 M	0411	-0.9	-27
	0955	29.7	905
	1635	2.7	82
	2200	27.6	841
16 Tu	0443	0.5	15
	1029	29.2	890
	1714	3.0	91
	2242	25.9	789
17 W	0515	2.4	73
	1104	28.3	863
	1751	3.2	98
	2327	24.2	738
18 Th	0551	4.7	143
	1143	27.2	829
	1838	3.5	107
19 F	0028	22.7	692
	0638	7.3	223
	1235	25.7	783
	1937	3.7	113
20 Sa	0145	21.7	661
	0745	9.8	299
	1344	24.4	744
	2054	3.5	107
21 Su	0353	22.3	680
	0919	10.6	323
	1452	24.0	732
	2209	2.5	76
22 M	0457	24.0	732
	1030	9.7	296
	1556	24.4	744
	2315	1.0	30
23 Tu	0543	25.4	774
	1126	8.3	253
	1654	25.6	780
24 W	0008	-0.3	-9
	0619	26.4	805
	1214	6.9	210
	1738	27.0	823
25 Th	0053	-1.3	-40
	0651	27.3	832
	1256	5.6	171
	1819	28.4	866
26 F	0132	-2.0	-61
	0722	28.2	860
	1336	4.3	131
	1901	29.6	902
27 Sa	0208	-2.5	-76
	0754	28.9	881
	1417	3.1	94
	1940	30.3	924
28 Su	0243	-2.7	-82
	0828	29.6	902
	1456	2.0	61
	2021	30.5	930
29 M	0318	-2.5	-76
	0859	30.2	920
	1538	1.1	34
	2102	30.2	920
30 Tu	0351	-2.0	-61
	0933	30.6	933
	1619	0.5	15
	2144	29.5	899
31 W	0427	-1.0	-30
	1008	30.9	942
	1703	0.1	3
	2229	28.4	866

FEBRUARY

Day	Time	Height ft	Height cm
1 Th	0506	0.7	21
	1048	30.7	936
	1749	0.1	3
	2320	26.8	817
2 F	0549	3.1	94
	1133	29.8	908
	1844	0.6	18
3 Sa	0026	25.0	762
	0642	6.0	183
	1230	28.2	860
	1952	1.2	37
4 Su	0211	23.9	728
	0801	8.5	259
	1351	26.8	817
	2114	1.4	43
5 M	0351	24.8	756
	0929	8.9	271
	1519	26.5	808
	2247	0.4	12
6 Tu	0502	26.5	808
	1059	7.8	238
	1631	27.2	829
	2355	-1.4	-43
7 W	0600	27.9	850
	1206	5.6	171
	1731	28.4	866
8 Th	0048	-2.8	-85
	0645	28.8	878
	1257	3.6	110
	1817	29.5	899
9 F	0131	-3.2	-98
	0721	29.2	890
	1341	2.2	67
	1901	30.3	924
10 Sa	0209	-2.8	-85
	0752	29.6	902
	1422	1.4	43
	1942	30.6	933
11 Su	0243	-2.1	-64
	0820	29.9	911
	1459	1.0	30
	2021	30.4	927
12 M	0312	-1.1	-34
	0848	30.2	920
	1533	0.9	27
	2059	29.6	902
13 Tu	0339	-0.1	-3
	0915	30.2	920
	1606	0.9	27
	2134	28.5	869
14 W	0408	1.1	34
	0944	29.8	908
	1638	0.9	27
	2211	27.1	826
15 Th	0439	2.8	85
	1011	29.0	884
	1712	1.1	34
	2251	25.6	780
16 F	0512	5.0	152
	1043	27.7	844
	1751	1.7	52
	2343	23.9	728
17 Sa	0551	7.6	232
	1122	25.9	789
	1839	2.7	82
18 Su	0056	22.4	683
	0641	10.3	314
	1223	23.7	722
	1945	3.8	116
19 M	0226	22.0	671
	0831	12.0	366
	1404	22.5	686
	2119	3.8	116
20 Tu	0416	23.2	707
	1001	10.6	323
	1524	23.1	704
	2238	2.4	73
21 W	0508	24.9	759
	1059	8.5	259
	1628	24.7	753
	2337	0.8	24
22 Th	0547	26.2	799
	1148	6.4	195
	1718	26.7	814
23 F	0022	-0.6	-18
	0619	27.5	838
	1233	4.4	134
	1800	28.7	875
24 Sa	0104	-1.5	-46
	0653	28.7	875
	1315	2.4	73
	1843	30.2	920
25 Su	0141	-2.2	-67
	0724	29.9	911
	1358	0.7	21
	1924	31.2	951
26 M	0217	-2.4	-73
	0756	30.9	942
	1440	-0.8	-24
	2004	31.6	963
27 Tu	0254	-2.1	-64
	0828	31.8	969
	1521	-1.8	-55
	2047	31.3	954
28 W	0330	-1.4	-43
	0902	32.3	985
	1603	-2.3	-70
	2131	30.5	930

MARCH

Day	Time	Height ft	Height cm
1 Th	0406	-0.1	-3
	0939	32.3	985
	1645	-2.2	-67
	2216	29.2	890
2 F	0445	1.9	58
	1018	31.5	960
	1731	-1.4	-43
	2309	27.5	838
3 Sa	0527	4.5	137
	1105	29.8	908
	1823	0.0	0
4 Su	0023	25.6	780
	0623	7.5	229
	1205	27.3	832
	1930	1.6	49
5 M	0202	24.6	750
	0756	9.5	290
	1341	25.4	774
	2100	2.3	70
6 Tu	0335	25.3	771
	0935	8.8	268
	1514	25.4	774
	2233	1.2	37
7 W	0446	26.9	820
	1059	6.3	192
	1625	26.5	808
	2339	-0.6	-18
8 Th	0539	28.3	863
	1155	3.7	113
	1721	27.8	847
9 F	0027	-1.6	-49
	0622	29.0	884
	1243	1.8	55
	1808	28.9	881
10 Sa	0109	-1.6	-49
	0656	29.3	893
	1323	0.7	21
	1848	29.7	905
11 Su	0143	-0.9	-27
	0722	29.6	902
	1401	0.1	3
	1925	30.2	920
12 M	0214	0.0	0
	0745	30.1	917
	1435	-0.1	-3
	2002	30.2	920
13 Tu	0242	0.8	24
	0810	30.5	930
	1507	-0.2	-6
	2038	29.7	905
14 W	0307	1.5	46
	0836	30.5	930
	1536	-0.3	-9
	2111	28.9	881
15 Th	0336	2.6	79
	0904	30.0	914
	1608	-0.3	-9
	2147	27.9	850
16 F	0407	4.0	122
	0930	29.2	890
	1640	-0.1	-3
	2224	26.6	811
17 Sa	0440	5.8	177
	1000	27.8	847
	1718	0.6	18
	2312	25.1	765
18 Su	0517	7.9	241
	1039	25.8	786
	1802	1.9	58
19 M	0021	23.6	719
	0604	10.1	308
	1135	23.5	716
	1857	3.5	107
20 Tu	0140	22.8	695
	0713	11.8	360
	1308	22.0	671
	2015	4.5	137
21 W	0308	23.3	710
	0924	10.7	326
	1445	22.3	680
	2151	3.7	113
22 Th	0417	24.8	756
	1026	8.1	247
	1553	24.4	744
	2254	2.2	67
23 F	0503	26.4	805
	1116	5.4	165
	1647	26.6	811
	2344	0.9	27
24 Sa	0541	27.9	850
	1204	2.9	88
	1734	28.7	875
25 Su	0027	-0.1	-3
	0614	29.4	896
	1251	0.5	15
	1819	30.3	924
26 M	0109	-0.7	-21
	0646	30.8	939
	1336	-1.5	-46
	1904	31.4	957
27 Tu	0148	-0.8	-24
	0720	32.1	978
	1420	-3.0	-91
	1948	31.7	966
28 W	0228	-0.5	-15
	0755	32.9	1003
	1504	-3.8	-116
	2034	31.5	960
29 Th	0307	0.3	9
	0833	33.2	1012
	1547	-4.0	-122
	2120	30.8	939
30 F	0347	1.7	52
	0913	32.7	997
	1629	-3.3	-101
	2209	29.6	902
31 Sa	0429	3.6	110
	0955	31.3	954
	1714	-1.9	-58
	2306	28.1	856

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0515	5.9	180	16 M	0453	7.9	241
	1046	29.0	884		1011	25.5	777
	1807	0.0	0		1733	1.4	43
					2351	24.7	753
2 M	0021	26.6	811	17 Tu	0543	9.3	283
	0621	8.2	250		1109	23.6	719
	1156	26.3	802		1823	2.8	85
	1913	1.9	58				
3 Tu	0140	25.9	789	18 W	0059	24.1	735
	0758	8.8	268		0643	10.1	308
	1335	24.7	753		1228	22.4	683
	2037	2.8	85		1924	4.1	125
4 W	0304	26.2	799	19 Th	0212	24.3	741
	0925	7.1	216		0818	9.6	293
	1501	24.8	756		1353	22.7	692
	2205	2.4	73		2045	4.3	131
5 Th	0415	27.3	832	20 F	0319	25.3	771
	1038	4.4	134		0943	6.9	210
	1610	25.8	786		1511	24.3	741
	2310	1.3	40		2159	3.5	107
6 F	0507	28.3	863	21 Sa	0412	26.8	817
	1134	2.0	61		1039	4.0	122
	1707	27.1	826		1612	26.3	802
	2358	0.8	24		2254	2.6	79
7 Sa	0550	28.7	875	22 Su	0454	28.4	866
	1221	0.4	12		1134	1.3	40
	1753	28.0	853		1707	28.2	860
					2345	1.9	58
8 Su	0039	1.1	34	23 M	0531	30.0	914
	0619	29.0	884		1224	-1.0	-30
	1303	-0.3	-9		1800	29.6	902
	1835	28.7	875				
9 M	0113	1.9	58	24 Tu	0034	1.5	46
	0643	29.3	893		0608	31.4	957
	1338	-0.6	-18		1314	-2.9	-88
	1909	29.2	890		1848	30.5	930
10 Tu	0142	2.6	79	25 W	0120	1.4	43
	0707	29.9	911		0645	32.5	991
	1411	-0.6	-18		1401	-4.1	-125
	1945	29.4	896		1934	30.9	942
11 W	0209	3.1	94	26 Th	0204	1.7	52
	0733	30.3	924		0726	33.1	1009
	1440	-0.8	-24		1447	-4.7	-143
	2018	29.3	893		2023	30.8	939
12 Th	0238	3.6	110	27 F	0248	2.3	70
	0800	30.2	920		0808	33.0	1006
	1510	-0.9	-27		1531	-4.5	-137
	2053	28.8	878		2110	30.4	927
13 F	0309	4.3	131	28 Sa	0333	3.3	101
	0830	29.6	902		0853	32.1	978
	1542	-0.8	-24		1616	-3.6	-110
	2129	28.1	856		2203	29.7	905
14 Sa	0342	5.3	162	29 Su	0420	4.6	140
	0857	28.6	872		0942	30.4	927
	1615	-0.5	-15		1701	-2.1	-64
	2208	27.1	826		2258	28.8	878
15 Su	0415	6.5	198	30 M	0512	6.1	186
	0930	27.2	829		1035	28.1	856
	1651	0.3	9		1751	-0.2	-6
	2253	25.9	789				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0002	27.8	847	16 W	0527	7.7	235
	0620	7.2	219		1055	24.2	738
	1151	25.8	786		1757	1.8	55
	1850	1.6	49				
2 W	0111	27.1	826	17 Th	0013	25.5	777
	0740	7.0	213		0623	7.7	235
	1316	24.4	744		1159	23.5	716
	2000	3.1	94		1849	2.9	88
3 Th	0221	26.9	820	18 F	0113	25.6	780
	0858	5.5	168		0732	6.9	210
	1434	24.1	735		1309	23.5	716
	2115	3.9	119		1950	3.9	119
4 F	0329	27.2	829	19 Sa	0215	26.3	802
	1007	3.4	104		0855	4.9	149
	1548	24.8	756		1422	24.3	741
	2228	4.0	122		2100	4.2	128
5 Sa	0425	27.6	841	20 Su	0311	27.4	835
	1107	1.4	43		1001	2.3	70
	1649	25.8	786		1537	25.6	780
	2321	4.0	122		2204	4.0	122
6 Su	0505	27.9	850	21 M	0402	28.7	875
	1153	0.0	0		1100	0.0	0
	1740	26.7	814		1646	27.1	826
					2302	3.8	116
7 M	0005	4.3	131	22 Tu	0449	30.1	917
	0537	28.1	856		1158	-1.9	-58
	1235	-0.6	-18		1747	28.3	863
	1822	27.4	835				
8 Tu	0040	4.7	143	23 W	0000	3.7	113
	0603	28.5	869		0531	31.2	951
	1312	-0.8	-24		1253	-3.4	-104
	1857	27.9	850		1837	29.2	890
9 W	0112	5.0	152	24 Th	0053	3.6	110
	0630	29.1	887		0616	32.1	978
	1346	-0.9	-27		1344	-4.3	-131
	1930	28.3	863		1928	29.7	905
10 Th	0141	5.1	155	25 F	0145	3.5	107
	0702	29.4	896		0703	32.4	988
	1417	-1.0	-30		1432	-4.6	-140
	2004	28.4	866		2014	29.8	908
11 F	0213	5.3	162	26 Sa	0235	3.6	110
	0731	29.3	893		0750	32.1	978
	1449	-1.0	-30		1518	-4.4	-134
	2040	28.3	863		2102	29.8	908
12 Sa	0246	5.6	171	27 Su	0323	3.8	116
	0803	28.7	875		0839	31.2	951
	1521	-0.9	-27		1603	-3.6	-110
	2117	27.9	850		2150	29.6	902
13 Su	0321	6.1	186	28 M	0413	4.2	128
	0835	27.8	847		0931	29.7	905
	1555	-0.5	-15		1647	-2.4	-73
	2155	27.2	829		2241	29.3	893
14 M	0358	6.7	204	29 Tu	0504	4.7	143
	0913	26.7	814		1027	27.8	847
	1632	0.0	0		1730	-0.7	-21
	2237	26.5	808		2336	28.7	875
15 Tu	0440	7.2	219	30 W	0602	5.2	158
	0958	25.4	774		1132	25.8	786
	1712	0.8	24		1818	1.3	40
	2322	25.9	789				
				31 Th	0031	28.0	853
					0706	5.2	158
					1242	24.2	738
					1911	3.3	101

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0128	27.3	832	16 Sa	0018	27.3	832
	0815	4.5	137		0702	4.0	122
	1358	23.3	710		1234	24.3	741
	2012	5.1	155		1910	3.5	107
2 Sa	0228	26.8	817	17 Su	0112	27.5	838
	0923	3.3	101		0812	2.8	85
	1519	23.4	713		1345	24.2	738
	2116	6.4	195		2015	4.9	149
3 Su	0324	26.5	808	18 M	0215	28.0	853
	1026	1.8	55		0922	1.0	30
	1630	24.4	744		1511	24.7	753
	2225	6.9	210		2124	5.6	171
4 M	0412	26.5	808	19 Tu	0314	28.6	872
	1121	0.6	18		1031	-0.6	-18
	1723	25.5	777		1638	25.9	789
	2323	7.0	213		2230	5.7	174
5 Tu	0451	26.8	817	20 W	0412	29.5	899
	1206	-0.3	-9		1137	-1.9	-58
	1808	26.3	802		1742	27.3	832
					2332	5.5	168
6 W	0005	6.9	210	21 Th	0507	30.3	924
	0526	27.3	832		1239	-3.1	-94
	1246	-0.8	-24		1835	28.2	860
	1845	26.9	820				
7 Th	0044	6.6	201	22 F	0037	5.1	155
	0600	27.9	850		0600	31.0	945
	1323	-1.0	-30		1332	-4.0	-122
	1915	27.3	832		1922	28.8	878
8 F	0120	6.3	192	23 Sa	0133	4.3	131
	0637	28.3	863		0651	31.4	957
	1359	-1.2	-37		1421	-4.4	-134
	1950	27.7	844		2006	29.2	890
9 Sa	0155	6.0	183	24 Su	0225	3.6	110
	0712	28.4	866		0741	31.3	954
	1433	-1.2	-37		1505	-4.3	-131
	2025	27.9	850		2050	29.5	899
10 Su	0231	5.8	177	25 M	0313	3.0	91
	0750	28.2	860		0832	30.7	936
	1507	-1.1	-34		1547	-3.6	-110
	2101	27.8	847		2131	29.7	905
11 M	0307	5.8	177	26 Tu	0400	2.8	85
	0826	27.6	841		0921	29.6	902
	1539	-0.9	-27		1627	-2.4	-73
	2139	27.5	838		2215	29.6	902
12 Tu	0347	5.7	174	27 W	0448	2.9	88
	0905	26.9	820		1011	28.1	856
	1615	-0.6	-18		1704	-0.8	-24
	2215	27.3	832		2257	29.2	890
13 W	0429	5.6	171	28 Th	0533	3.2	98
	0950	26.1	796		1101	26.2	799
	1651	-0.1	-3		1741	1.2	37
	2251	27.1	826		2343	28.4	866
14 Th	0512	5.3	162	29 F	0624	3.6	110
	1040	25.4	774		1159	24.3	741
	1733	0.7	21		1821	3.6	110
	2330	27.2	829				
15 F	0604	4.8	146	30 Sa	0031	27.4	835
	1135	24.8	756		0720	3.8	116
	1817	1.9	58		1306	22.9	698
					1910	6.1	186

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ANCHORAGE, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Su	0124	26.3	802	16 M	0027	28.4	866
	0821	3.5	107		0737	1.3	40
	1431	22.2	677		1319	24.1	735
	2015	8.1	247		1939	6.2	189
2 M	0218	25.4	774	17 Tu	0132	27.9	850
	0929	2.8	85		0851	0.7	21
	1605	23.1	704		1507	24.1	735
	2129	9.0	274		2057	7.4	226
3 Tu	0315	25.1	765	18 W	0244	27.8	847
	1036	1.7	52		1005	-0.1	-3
	1707	24.5	747		1633	25.5	777
	2241	8.8	268		2209	7.3	223
4 W	0409	25.3	771	19 Th	0356	28.3	863
	1132	0.5	15		1124	-1.2	-37
	1752	25.6	780		1737	27.0	823
	2336	8.0	244		2323	6.6	201
5 Th	0457	25.9	789	20 F	0459	29.2	890
	1219	-0.5	-15		1229	-2.6	-79
	1827	26.4	805		1829	28.1	856
6 F	0022	7.2	219	21 Sa	0032	5.2	158
	0542	26.8	817		0555	30.1	917
	1302	-1.2	-37		1322	-3.7	-113
	1859	26.9	820		1914	28.8	878
7 Sa	0102	6.3	192	22 Su	0127	3.7	113
	0624	27.7	844		0646	30.8	939
	1341	-1.6	-49		1407	-4.1	-125
	1931	27.5	838		1953	29.3	893
8 Su	0141	5.5	168	23 M	0215	2.4	73
	0701	28.3	863		0733	31.1	948
	1416	-1.7	-52		1448	-3.8	-116
	2004	28.0	853		2028	29.7	905
9 M	0218	4.9	149	24 Tu	0300	1.5	46
	0739	28.6	872		0818	30.8	939
	1451	-1.7	-52		1525	-2.9	-88
	2041	28.3	863		2104	30.0	914
10 Tu	0256	4.3	131	25 W	0342	1.2	37
	0818	28.5	869		0904	30.0	914
	1523	-1.5	-46		1559	-1.6	-49
	2113	28.4	866		2139	30.0	914
11 W	0334	3.8	116	26 Th	0421	1.3	40
	0859	28.1	856		0947	28.6	872
	1555	-1.3	-40		1631	0.0	0
	2146	28.5	869		2213	29.6	902
12 Th	0415	3.2	98	27 F	0501	1.8	55
	0939	27.5	838		1029	26.9	820
	1629	-0.7	-21		1702	1.9	58
	2218	28.7	875		2248	28.7	875
13 F	0458	2.6	79	28 Sa	0541	2.3	70
	1023	26.9	820		1114	25.0	762
	1706	0.2	6		1736	4.3	131
	2255	28.9	881		2325	27.4	835
14 Sa	0543	2.1	64	29 Su	0623	2.8	85
	1112	26.0	792		1213	23.3	710
	1748	1.8	55		1818	6.9	210
	2336	28.8	878				
15 Su	0635	1.6	49	30 M	0013	25.8	786
	1210	25.0	762		0714	3.3	101
	1837	4.0	122		1326	22.1	674
					1915	9.5	290
				31 Tu	0118	24.3	741
					0823	3.5	107
					1524	22.3	680
					2050	10.8	329

AUGUST

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 W	0230	23.6	719	16 Th	0231	26.6	811
	0941	2.9	88		0953	0.9	27
	1638	23.9	728		1623	26.0	792
	2210	10.0	305		2207	7.9	241
2 Th	0337	23.9	728	17 F	0354	27.3	832
	1055	1.5	46		1118	-0.6	-18
	1726	25.4	774		1725	27.7	844
	2311	8.4	256		2329	6.0	183
3 F	0438	25.0	762	18 Sa	0459	28.6	872
	1152	0.0	0		1217	-2.2	-67
	1806	26.4	805		1816	28.8	878
4 Sa	0000	6.8	207	19 Su	0029	3.8	116
	0527	26.4	805		0552	29.8	908
	1237	-1.1	-34		1306	-3.1	-94
	1835	27.2	829		1856	29.4	896
5 Su	0043	5.4	165	20 M	0118	2.0	61
	0607	27.8	847		0637	30.7	936
	1317	-1.7	-52		1348	-3.0	-91
	1905	27.9	850		1930	29.8	908
6 M	0122	4.2	128	21 Tu	0202	0.8	24
	0645	29.0	884		0721	31.1	948
	1354	-2.0	-61		1425	-2.2	-67
	1937	28.7	875		2000	30.2	920
7 Tu	0200	3.1	94	22 W	0241	0.3	9
	0725	29.7	905		0802	30.9	942
	1427	-1.9	-58		1458	-1.1	-34
	2009	29.3	893		2029	30.5	930
8 W	0240	2.1	64	23 Th	0318	0.2	6
	0803	30.0	914		0843	30.2	920
	1459	-1.7	-52		1527	0.2	6
	2041	29.8	908		2057	30.5	930
9 Th	0320	1.2	37	24 F	0353	0.4	12
	0843	29.7	905		0921	29.1	887
	1531	-1.2	-37		1555	1.6	49
	2113	30.2	920		2128	30.0	914
10 F	0400	0.6	18	25 Sa	0427	0.8	24
	0923	29.1	887		0958	27.6	841
	1606	-0.4	-12		1624	3.3	101
	2144	30.5	930		2157	29.0	884
11 Sa	0440	0.1	3	26 Su	0501	1.2	37
	1006	28.2	860		1040	26.9	792
	1640	0.9	27		1656	5.4	165
	2219	30.4	927		2227	27.7	844
12 Su	0524	0.0	0	27 M	0538	1.9	58
	1055	27.0	823		1130	24.4	744
	1722	2.8	85		1736	7.8	238
	2301	29.8	908		2301	25.8	786
13 M	0613	0.3	9	28 Tu	0621	2.8	85
	1151	25.5	777		1239	23.0	701
	1810	5.4	165		1823	10.3	314
	2354	28.6	872		2357	23.6	719
14 Tu	0712	0.9	27	29 W	0723	3.9	119
	1314	24.2	738		1403	22.5	686
	1914	7.9	241		1958	12.0	366
15 W	0102	27.1	826	30 Th	0147	22.3	680
	0827	1.3	40		0853	4.1	125
	1506	24.4	744		1556	23.6	719
	2044	8.9	271		2143	10.6	323
				31 F	0307	22.9	698
					1015	2.8	85
					1650	25.3	771
					2244	8.2	250

SEPTEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Sa	0414	24.5	747	16 Su	0454	28.4	866
	1118	1.1	34		1158	-1.1	-34
	1730	26.6	811		1752	29.5	899
	2334	6.1	186				
2 Su	0505	26.4	805	17 M	0016	1.7	52
	1205	-0.2	-6		0542	29.6	902
	1801	27.7	844		1243	-1.4	-43
					1829	30.0	914
3 M	0016	4.2	128	18 Tu	0102	0.3	9
	0545	28.2	860		0626	30.3	924
	1246	-0.9	-27		1323	-0.8	-24
	1833	28.8	878		1859	30.2	920
4 Tu	0059	2.5	76	19 W	0142	-0.3	-9
	0625	29.7	905		0707	30.6	933
	1323	-1.2	-37		1358	0.3	9
	1904	29.8	908		1926	30.5	930
5 W	0139	1.0	30	20 Th	0220	-0.5	-15
	0704	30.7	936		0744	30.6	933
	1358	-1.1	-34		1427	1.5	46
	1934	30.8	939		1951	30.8	939
6 Th	0220	-0.3	-9	21 F	0252	-0.3	-9
	0744	31.1	948		0822	30.1	917
	1432	-0.8	-24		1454	2.5	76
	2005	31.5	960		2018	30.7	936
7 F	0301	-1.2	-37	22 Sa	0324	-0.1	-3
	0825	30.9	942		0857	29.3	893
	1507	-0.2	-6		1521	3.6	110
	2038	31.9	972		2046	30.1	917
8 Sa	0342	-1.7	-52	23 Su	0355	0.2	6
	0909	30.3	924		0934	28.2	860
	1542	0.9	27		1551	4.9	149
	2112	32.0	975		2113	29.1	887
9 Su	0423	-1.7	-52	24 M	0427	0.6	18
	0952	29.2	890		1011	26.9	820
	1619	2.4	73		1624	6.5	198
	2150	31.4	957		2141	27.7	844
10 M	0505	-1.2	-37	25 Tu	0504	1.3	40
	1043	27.7	844		1101	25.5	777
	1741	4.5	137		1703	8.4	256
	2235	30.1	917		2219	25.8	786
11 Tu	0553	-0.1	-3	26 W	0546	2.4	73
	1146	26.1	796		1204	24.2	738
	1749	7.0	213		1751	10.3	314
	2328	28.0	853		2312	23.5	716
12 W	0652	1.3	40	27 Th	0636	3.8	116
	1319	25.0	762		1319	23.5	716
	1905	9.2	280		1857	11.8	360
13 Th	0050	26.0	792	28 F	0048	21.8	664
	0812	2.2	67		0754	4.9	149
	1450	25.5	777		1442	24.0	732
	2047	9.0	274		2108	10.7	326
14 F	0233	25.7	783	29 Sa	0229	22.3	680
	0943	1.8	55		0932	4.2	128
	1607	27.0	823		1556	25.4	774
	2214	6.8	207		2210	7.9	241
15 Sa	0351	26.9	820	30 Su	0340	24.1	735
	1102	0.2	6		1036	2.7	82
	1707	28.6	872		1641	26.9	820
	2325	4.0	122		2259	5.2	158

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ANCHORAGE, ALASKA, 1990

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height (ft)	Height (cm)
1	0433	26.2	799
M	1126	1.6	49
	1721	28.3	863
	2345	2.9	88
2	0518	28.2	860
Tu	1208	0.9	27
	1755	29.6	902
3	0031	0.9	27
W	0600	29.8	908
	1248	0.6	18
	1824	30.9	942
4	0114	-0.9	-27
Th	0644	30.9	942
	1326	0.6	18
	1857	32.0	975
5	0158	-2.3	-70
F	0726	31.4	957
	1404	0.9	27
	1930	32.8	1000
6	0240	-3.1	-94
Sa	0810	31.3	954
	1442	1.5	46
	2006	33.1	1009
7	0323	-3.3	-101
Su	0857	30.6	933
	1521	2.6	79
	2045	32.7	997
8	0406	-2.8	-85
M	0943	29.7	905
	1603	4.1	125
	2127	31.6	963
9	0450	-1.7	-52
Tu	1035	28.4	866
	1648	5.9	180
	2211	29.7	905
10	0538	-0.2	-6
W	1141	27.2	829
	1745	7.8	238
	2317	27.3	832
11	0638	1.5	46
Th	1303	26.5	808
	1909	8.9	271
12	0048	25.4	774
F	0756	2.6	79
	1423	26.8	817
	2044	7.5	229
13	0224	25.3	771
Sa	0919	2.6	79
	1537	27.8	847
	2201	4.8	146
14	0338	26.4	805
Su	1033	1.8	55
	1636	29.0	884
	2306	2.1	64
15	0442	27.7	844
M	1131	1.2	37
	1722	29.6	902
	2358	0.2	6
16	0531	28.7	875
Tu	1217	1.4	43
	1758	29.8	908
17	0041	-0.7	-21
W	0616	29.3	893
	1256	2.3	70
	1825	30.0	914
18	0121	-0.9	-27
Th	0654	29.6	902
	1328	3.3	101
	1849	30.3	924
19	0157	-0.7	-21
F	0730	29.7	905
	1356	4.1	125
	1914	30.6	933
20	0228	-0.5	-15
Sa	0805	29.6	902
	1422	4.7	143
	1943	30.4	927
21	0258	-0.3	-9
Su	0840	29.1	887
	1453	5.3	162
	2012	29.7	905
22	0328	0.0	0
M	0915	28.4	866
	1526	6.1	186
	2041	28.7	875
23	0402	0.3	9
Tu	0954	27.4	835
	1600	7.2	219
	2113	27.3	832
24	0437	1.0	30
W	1036	26.4	805
	1640	8.3	253
	2151	25.6	780
25	0517	2.0	61
Th	1133	25.4	774
	1728	9.5	290
	2248	23.7	722
26	0604	3.3	101
F	1238	24.7	753
	1827	10.3	314
27	0005	22.3	680
Sa	0700	4.5	137
	1347	24.8	756
	1956	9.8	299
28	0133	22.3	680
Su	0821	5.1	155
	1455	25.7	783
	2124	7.3	223
29	0252	23.7	722
M	0938	4.5	137
	1548	27.0	823
	2220	4.4	134
30	0356	25.6	780
Tu	1033	3.7	113
	1633	28.4	866
	2311	1.8	55
31	0449	27.5	838
W	1121	3.1	94
	1710	29.9	911

NOVEMBER

Day	Time	Height (ft)	Height (cm)
1	0001	-0.5	-15
Th	0539	29.1	887
	1208	2.8	85
	1744	31.3	954
2	0049	-2.2	-67
F	0625	30.1	917
	1253	2.6	79
	1821	32.5	991
3	0136	-3.5	-107
Sa	0713	30.7	936
	1338	2.7	82
	1900	33.2	1012
4	0222	-4.1	-125
Su	0759	30.8	939
	1422	3.1	94
	1941	33.3	1015
5	0307	-4.1	-125
M	0845	30.5	930
	1507	3.8	116
	2025	32.7	997
6	0352	-3.4	-104
Tu	0934	29.9	911
	1554	4.7	143
	2112	31.3	954
7	0437	-2.2	-67
W	1029	29.2	890
	1645	5.8	177
	2206	29.3	893
8	0527	-0.7	-21
Th	1128	28.5	869
	1746	6.8	207
	2312	27.1	826
9	0621	1.1	34
F	1238	27.9	850
	1900	6.9	210
10	0036	25.4	774
Sa	0727	2.6	79
	1346	27.8	847
	2019	5.6	171
11	0200	24.8	756
Su	0838	3.7	113
	1455	28.0	853
	2135	3.6	110
12	0319	25.2	768
M	0951	4.2	128
	1553	28.4	866
	2239	1.5	46
13	0425	26.2	799
Tu	1057	4.4	134
	1641	28.6	872
	2333	-0.1	-3
14	0521	27.2	829
W	1147	4.8	146
	1720	28.7	875
15	0019	-0.8	-24
Th	0608	27.9	850
	1227	5.3	162
	1750	28.9	881
16	0057	-1.0	-30
F	0646	28.3	863
	1259	5.8	177
	1816	29.2	890
17	0134	-0.8	-24
Sa	0720	28.6	872
	1328	6.0	183
	1845	29.6	902
18	0206	-0.6	-18
Su	0752	28.8	878
	1359	6.0	183
	1917	29.5	899
19	0238	-0.5	-15
M	0825	28.7	875
	1431	6.1	186
	1949	29.0	884
20	0310	-0.3	-9
Tu	0902	28.4	866
	1507	6.4	195
	2021	28.2	860
21	0342	0.0	0
W	0939	27.8	847
	1544	6.8	207
	2057	27.1	826
22	0416	0.4	12
Th	1019	27.2	829
	1626	7.3	223
	2139	25.8	786
23	0455	1.1	34
F	1103	26.5	808
	1712	7.7	235
	2232	24.5	747
24	0536	2.1	64
Sa	1151	26.0	792
	1804	7.8	238
	2333	23.5	716
25	0623	3.4	104
Su	1249	25.9	789
	1905	7.3	223
26	0042	23.1	704
M	0718	4.7	143
	1349	26.2	799
	2024	5.8	177
27	0154	23.4	713
Tu	0827	5.5	168
	1447	27.0	823
	2135	3.4	104
28	0311	24.6	750
W	0936	5.6	171
	1537	28.2	860
	2233	0.9	27
29	0422	26.2	799
Th	1036	5.2	158
	1622	29.6	902
	2331	-1.1	-34
30	0524	27.7	844
F	1131	4.8	146
	1708	30.9	942

DECEMBER

Day	Time	Height (ft)	Height (cm)
1	0026	-2.7	-82
Sa	0517	28.9	881
	1224	4.4	134
	1752	32.0	975
2	0118	-3.8	-116
Su	0704	29.6	902
	1317	4.1	125
	1837	32.7	997
3	0208	-4.4	-134
M	0751	30.0	914
	1408	3.8	116
	1926	32.8	1000
4	0256	-4.5	-137
Tu	0836	30.1	917
	1459	3.7	113
	2014	32.2	981
5	0341	-4.1	-125
W	0925	30.1	917
	1548	3.8	116
	2107	31.1	948
6	0424	-3.1	-94
Th	1011	30.0	914
	1640	4.0	122
	2200	29.5	899
7	0509	-1.6	-49
F	1104	29.6	902
	1735	4.4	134
	2258	27.5	838
8	0554	0.4	12
Sa	1159	29.0	884
	1834	4.5	137
9	0007	25.5	777
Su	0646	2.7	82
	1258	28.2	860
	1940	4.2	128
10	0124	24.1	735
M	0745	5.0	152
	1359	27.5	838
	2050	3.4	104
11	0250	23.7	722
Tu	0850	6.8	207
	1459	26.9	820
	2202	2.2	67
12	0409	24.4	744
W	1007	7.7	235
	1553	26.7	814
	2302	0.9	27
13	0510	25.6	780
Th	1113	7.8	238
	1638	26.7	814
	2352	-0.1	-3
14	0558	26.6	811
F	1158	7.6	232
	1718	27.1	826
15	0035	-0.6	-18
Sa	0637	27.3	832
	1237	7.3	223
	1752	27.7	844
16	0113	-0.9	-27
Su	0709	27.7	844
	1311	6.8	207
	1827	28.3	863
17	0149	-1.1	-34
M	0737	28.1	856
	1344	6.2	189
	1902	28.7	875
18	0222	-1.1	-34
Tu	0812	28.4	866
	1418	5.8	177
	1938	28.6	872
19	0255	-1.1	-34
W	0845	28.5	869
	1454	5.5	168
	2014	28.2	860
20	0327	-0.8	-24
Th	0920	28.3	863
	1533	5.4	165
	2051	27.5	838
21	0359	-0.5	-15
F	0956	28.1	856
	1613	5.3	162
	2133	26.7	814
22	0433	0.1	3
Sa	1028	27.8	847
	1655	5.1	155
	2219	25.9	789
23	0509	0.9	27
Su	1106	27.6	841
	1741	4.8	146
	2309	25.0	762
24	0551	2.3	70
M	1146	27.4	835
	1833	4.3	131
25	0005	24.2	738
Tu	0639	4.0	122
	1237	27.2	829
	1934	3.6	110
26	0111	23.6	719
W	0735	5.8	177
	1337	27.3	832
	2048	2.3	70
27	0231	23.7	722
Th	0847	7.0	213
	1441	27.7	844
	2157	0.6	18
28	0407	24.9	759
F	0957	7.0	213
	1543	28.7	875
	2303	-0.9	-27
29	0516	26.5	808
Sa	1102	6.4	195
	1641	29.8	908
30	0008	-2.4	-73
Su	0611	28.0	853
	1204	5.6	171
	1736	30.9	942
31	0106	-3.7	-113
M	0700	28.9	881
	1307	4.5	137
	1829	31.8	969

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KODIAK, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0445	7.5	229	16 Tu	0517	7.9	241
	1019	2.1	64		1117	1.7	52
	1612	8.3	253		1708	6.9	210
	2248	-0.6	-18		2317	0.8	24
2 Tu	0522	7.7	235	17 W	0551	7.8	238
	1111	1.9	58		1209	1.9	58
	1701	7.5	229		1756	5.9	180
	2327	0.1	3		2348	1.6	49
3 W	0602	8.0	244	18 Th	0631	7.6	232
	1212	1.7	52		1309	2.0	61
	1802	6.5	198		1859	5.1	155
4 Th	0009	0.9	27	19 F	0023	2.4	73
	0649	8.2	250		0718	7.5	229
	1326	1.4	43		1421	1.9	58
	1918	5.7	174		2023	4.5	137
5 F	0057	1.7	52	20 Sa	0108	3.1	94
	0744	8.4	256		0810	7.4	226
	1445	0.9	27		1544	1.6	49
	2053	5.2	158		2212	4.4	134
6 Sa	0159	2.4	73	21 Su	0209	3.6	110
	0847	8.7	265		0917	7.5	229
	1604	0.2	6		1654	1.0	30
	2230	5.2	158		2336	4.8	146
7 Su	0312	2.9	88	22 M	0333	3.8	116
	0954	9.1	277		1017	7.8	238
	1713	-0.7	-21		1745	0.4	12
	2345	5.7	174				
8 M	0425	3.0	91	23 Tu	0024	5.3	162
	1057	9.5	290		0449	3.6	110
	1812	-1.4	-43		1115	8.3	253
					1827	-0.3	-9
9 Tu	0045	6.2	189	24 W	0101	5.8	177
	0537	2.8	85		0545	3.3	101
	1156	9.9	302		1200	8.8	268
	1901	-2.0	-61		1904	-0.9	-27
10 W	0133	6.8	207	25 Th	0135	6.4	195
	0635	2.4	73		0632	2.8	85
	1248	10.2	311		1243	9.2	280
	1946	-2.3	-70		1938	-1.3	-40
11 Th	0216	7.2	219	26 F	0205	6.9	210
	0725	2.1	64		0717	2.3	70
	1337	10.2	311		1322	9.5	290
	2027	-2.3	-70		2010	-1.6	-49
12 F	0254	7.6	232	27 Sa	0235	7.4	226
	0815	1.8	55		0756	1.8	55
	1422	10.0	305		1403	9.6	293
	2106	-2.1	-64		2041	-1.7	-52
13 Sa	0333	7.8	238	28 Su	0304	7.8	238
	0900	1.6	49		0837	1.3	40
	1504	9.5	290		1442	9.4	287
	2141	-1.6	-49		2114	-1.5	-46
14 Su	0408	8.0	244	29 M	0336	8.2	250
	0943	1.6	49		0921	0.9	27
	1543	8.7	265		1522	9.0	274
	2215	-0.9	-27		2146	-1.1	-34
15 M	0442	8.0	244	30 Tu	0408	8.6	262
	1029	1.6	49		1005	0.7	21
	1627	7.8	238		1605	8.3	253
	2247	-0.1	-3		2219	-0.4	-12
				31 W	0445	8.8	268
					1055	0.6	18
					1655	7.3	223
					2254	0.4	12

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0522	8.8	268	16 F	0527	7.9	241
	1154	0.6	18		1212	1.4	43
	1751	6.3	192		1812	5.2	158
	2333	1.3	40		2327	2.6	79
2 F	0609	8.8	268	17 Sa	0607	7.5	229
	1300	0.7	21		1315	1.7	52
	1905	5.4	165		1924	4.5	137
3 Sa	0018	2.2	67	18 Su	0002	3.2	98
	0705	8.6	262		0700	7.3	223
	1423	0.6	18		1444	1.8	55
	2050	4.8	146		2127	4.3	131
4 Su	0123	3.0	91	19 M	0108	3.8	116
	0820	8.5	259		0818	7.1	216
	1552	0.2	6		1609	1.4	43
	2235	5.0	152		2307	4.7	143
5 M	0253	3.5	107	20 Tu	0251	4.0	122
	0937	8.6	262		0940	7.4	226
	1707	-0.4	-12		1713	0.8	24
	2347	5.5	171		2355	5.3	162
6 Tu	0429	3.3	101	21 W	0424	3.7	113
	1051	8.9	271		1046	7.9	241
	1805	-1.0	-30		1755	0.1	3
7 W	0038	6.3	192	22 Th	0027	6.0	183
	0539	2.8	85		0526	3.1	94
	1151	9.3	283		1139	8.4	256
	1852	-1.4	-43		1832	-0.5	-15
8 Th	0120	7.0	213	23 F	0058	6.7	204
	0635	2.2	67		0613	2.3	70
	1243	9.6	293		1224	9.0	274
	1931	-1.6	-49		1906	-1.0	-30
9 F	0157	7.6	232	24 Sa	0128	7.4	226
	0723	1.6	49		0658	1.4	43
	1331	9.6	293		1306	9.3	283
	2007	-1.6	-49		1938	-1.2	-37
10 Sa	0229	8.0	244	25 Su	0156	8.1	247
	0804	1.1	34		0741	0.6	18
	1410	9.4	287		1348	9.4	287
	2039	-1.4	-43		2010	-1.2	-37
11 Su	0259	8.3	253	26 M	0225	8.7	265
	0845	0.8	24		0823	-0.1	-3
	1449	9.0	274		1430	9.3	283
	2109	-0.9	-27		2043	-0.9	-27
12 M	0328	8.5	259	27 Tu	0257	9.2	280
	0924	0.7	21		0906	-0.6	-18
	1526	8.4	256		1515	8.8	268
	2136	-0.3	-9		2117	-0.4	-12
13 Tu	0358	8.5	259	28 W	0331	9.5	290
	1000	0.7	21		0951	-0.8	-24
	1603	7.7	235		1559	8.0	244
	2205	0.4	12		2149	0.3	9
14 W	0427	8.3	253				
	1040	0.8	24				
	1640	5.8	207				
	2230	1.2	37				
15 Th	0456	8.1	247				
	1124	1.1	34				
	1721	6.0	183				
	2258	1.9	58				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0407	9.6	293	16 F	0408	8.4	256
	1040	-0.7	-21		1048	0.4	12
	1648	7.1	216		1658	6.0	183
	2228	1.1	34		2219	2.3	70
2 F	0449	9.4	287	17 Sa	0437	9.0	244
	1135	-0.3	-9		1133	0.9	27
	1748	6.1	186		1746	5.3	162
	2309	2.0	61		2248	2.9	88
3 Sa	0538	9.0	274	18 Su	0512	7.6	232
	1244	0.1	3		1228	1.3	40
	1905	5.3	162		1855	4.7	143
	2359	2.8	85		2330	3.4	104
4 Su	0642	8.4	256	19 M	0607	7.2	219
	1407	0.4	12		1345	1.5	46
	2050	5.0	152		2038	4.6	140
5 M	0116	3.5	107	20 Tu	0036	3.9	119
	0804	8.0	244		0722	6.9	210
	1537	0.4	12		1508	1.4	43
	2228	5.3	162		2214	4.9	149
6 Tu	0301	3.6	110	21 W	0222	4.0	122
	0933	8.0	244		0854	7.0	213
	1651	0.0	0		1617	1.0	30
	2331	6.0	183		2303	5.6	171
7 W	0435	3.1	94	22 Th	0359	3.5	107
	1049	8.2	250		1010	7.4	226
	1745	-0.3	-9		1707	0.5	15
					2338	6.4	195
8 Th	0014	6.7	204	23 F	0502	2.6	79
	0539	2.4	73		1110	7.9	241
	1148	8.6	262		1746	0.1	3
	1829	-0.6	-18				
9 F	0051	7.4	226	24 Sa	0010	7.2	219
	0629	1.6	49		0552	1.5	46
	1237	8.8	268		1202	8.4	256
	1904	-0.6	-18		1824	-0.2	-6
10 Sa	0123	8.0	244	25 Su	0041	8.1	247
	0712	0.9	27		0637	0.4	12
	1320	8.8	268		1250	8.7	265
	1935	-0.5	-15		1859	-0.3	-9
11 Su	0153	8.4	256	26 M	0113	8.9	271
	0751	0.4	12		0723	-0.6	-18
	1358	8.7	265		1334	8.9	271
	2007	-0.3	-9		1935	-0.2	-6
12 M	0221	8.7	265	27 Tu	0146	9.6	293
	0826	0.0	0		0805	-1.4	-43
	1433	8.3	253		1420	8.7	265
	2033	0.1	3		2010	0.1	3
13 Tu	0246	8.8	268	28 W	0221	10.1	308
	0859	-0.2	-6		0850	-1.8	-55
	1507	7.9	241		1507	8.3	253
	2100	0.6	18		2048	0.5	15
14 W	0312	8.8	268	29 Th	0259	10.2	311
	0934	-0.1	-3		0936	-1.9	-58
	1542	7.3	223		1555	7.7	235
	2126	1.2	37		2127	1.2	37
15 Th	0339	8.6	262	30 F	0339	10.1	308
	1009	0.1	3		1027	-1.6	-49
	1619	6.7	204		1648	6.9	210
	2154	1.8	55		2209	1.8	55
				31 Sa	0425	9.6	293
					1123	-1.0	-30
					1751	6.2	189
					2256	2.5	76

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KODIAK, ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0517	8.9	271	16 M	0442	7.7	235
	1229	-0.3	-9		1157	0.7	21
	1910	5.7	174		1836	5.2	158
	2357	3.2	98		2319	3.6	110
2 M	0626	8.1	247	17 Tu	0533	7.3	223
	1347	0.3	9		1257	1.0	30
	2038	5.6	171		1952	5.2	158
3 Tu	0127	3.5	107	18 W	0028	3.8	116
	0752	7.5	229		0639	6.9	210
	1508	0.5	15		1404	1.1	34
	2157	6.0	183		2103	5.6	171
4 W	0312	3.3	101	19 Th	0204	3.7	113
	0922	7.3	223		0809	6.7	204
	1618	0.5	15		1507	1.1	34
	2253	6.6	201		2156	6.2	189
5 Th	0433	2.6	79	20 F	0329	3.0	91
	1035	7.4	226		0932	6.8	207
	1710	0.5	15		1603	0.9	27
	2337	7.3	223		2239	7.0	213
6 F	0532	1.8	55	21 Sa	0435	1.9	58
	1136	7.6	232		1041	7.2	219
	1752	0.5	15		1651	0.8	24
					2316	7.9	241
7 Sa	0013	7.9	241	22 Su	0528	0.7	21
	0618	1.0	30		1139	7.6	232
	1222	7.7	235		1735	0.7	21
	1827	0.6	18		2353	8.8	268
8 Su	0042	8.3	253	23 M	0617	-0.5	-15
	0656	0.3	9		1232	7.9	241
	1304	7.8	238		1817	0.7	21
	1859	0.7	21				
9 M	0114	8.7	265	24 Tu	0030	9.6	293
	0733	-0.2	-6		0704	-1.6	-49
	1343	7.7	235		1322	8.0	244
	1928	1.0	30		1859	0.9	27
10 Tu	0139	8.9	271	25 W	0109	10.3	314
	0805	-0.6	-18		0749	-2.3	-70
	1419	7.6	232		1413	8.0	244
	1957	1.3	40		1941	1.1	34
11 W	0205	9.0	274	26 Th	0151	10.6	323
	0837	-0.7	-21		0838	-2.6	-79
	1454	7.3	223		1502	7.8	238
	2025	1.6	49		2023	1.4	43
12 Th	0234	8.9	271	27 F	0235	10.6	323
	0911	-0.7	-21		0926	-2.5	-76
	1530	6.9	210		1555	7.4	226
	2053	2.0	61		2110	1.9	58
13 F	0302	8.8	268	28 Sa	0320	10.2	311
	0946	-0.5	-15		1019	-2.1	-64
	1608	6.5	198		1648	6.9	210
	2123	2.4	73		2200	2.3	70
14 Sa	0331	8.5	259	29 Su	0410	9.6	293
	1024	-0.1	-3		1112	-1.4	-43
	1648	6.0	183		1749	6.5	198
	2154	2.8	85		2256	2.8	85
15 Su	0403	8.1	247	30 M	0508	8.7	265
	1107	0.3	9		1212	-0.6	-18
	1733	5.5	168		1900	6.3	192
	2229	3.2	98				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0006	3.1	94	16 W	0512	7.4	226
	0615	7.8	238		1217	0.4	12
	1316	0.1	3		1909	6.1	186
	2009	6.4	195				
2 W	0133	3.2	98	17 Th	0020	3.5	107
	0734	7.1	216		0610	6.9	210
	1423	0.6	18		1308	0.7	21
	2113	6.8	207		2002	6.5	198
3 Th	030	2.8	85	18 F	0141	3.1	94
		6.6	201		0729	6.5	198
	1526	1.0	30		1405	1.0	30
	2206	7.2	219		2050	7.1	216
4 F	0415	2.1	64	19 Sa	0258	2.3	70
	1012	6.5	198		0852	6.3	192
	1617	1.3	40		1501	1.3	40
	2249	7.7	235		2138	7.8	238
5 Sa	0511	1.3	40	20 Su	0405	1.2	37
	1115	6.6	201		1010	6.4	195
	1703	1.5	46		1554	1.5	46
	2326	8.2	250		2225	8.6	262
6 Su	0558	0.6	18	21 M	0505	0.0	0
	1206	6.7	204		1120	6.6	201
	1742	1.8	55		1646	1.7	52
	2358	8.5	259		2308	9.4	287
7 M	0635	-0.1	-3	22 Tu	0600	-1.1	-34
	1250	6.8	207		1221	6.9	210
	1817	1.9	58		1739	1.8	55
					2355	10.1	308
8 Tu	0030	8.8	268	23 W	0648	-2.1	-64
	0711	-0.5	-15		1314	7.2	219
	1330	6.8	207		1827	1.8	55
	1850	2.1	64				
9 W	0101	9.0	274	24 Th	0043	10.6	323
	0745	-0.9	-27		0737	-2.7	-82
	1408	6.8	207		1406	7.3	223
	1924	2.3	70		1917	1.9	58
10 Th	0130	9.0	274	25 F	0129	10.8	329
	0818	-1.0	-30		0828	-2.9	-88
	1447	6.7	204		1458	7.4	226
	1956	2.5	76		2007	2.0	61
11 F	0203	9.0	274	26 Sa	0218	10.7	326
	0853	-1.0	-30		0918	-2.7	-82
	1522	6.6	201		1549	7.3	223
	2028	2.7	82		2057	2.2	67
12 Sa	0233	8.9	271	27 Su	0308	10.2	311
	0931	-0.8	-24		1007	-2.3	-70
	1601	6.4	195		1640	7.2	219
	2103	2.9	88		2152	2.4	73
13 Su	0308	8.6	262	28 M	0401	9.5	290
	1008	-0.6	-18		1056	-1.6	-49
	1640	6.1	186		1735	7.1	216
	2136	3.1	94		2253	2.6	79
14 M	0344	8.3	253	29 Tu	0456	8.6	262
	1047	-0.3	-9		1146	-0.8	-24
	1725	6.0	183		1831	7.1	216
	2221	3.3	101		2359	2.7	82
15 Tu	0423	7.9	241	30 W	0555	7.6	232
	1129	0.0	0		1238	0.0	0
	1817	6.0	183		1923	7.2	219
	2313	3.5	107				
				31 Th	0113	2.7	82
					0705	6.7	204
					1331	0.8	24
					2018	7.4	226

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0231	2.4	73	16 Sa	0113	2.3	70
	0820	6.0	183		0700	6.2	189
	1423	1.5	46		1309	1.1	34
	2109	7.6	232		1954	7.9	241
2 Sa	0343	1.8	55	17 Su	0227	1.6	49
	0937	5.6	171		0822	5.7	174
	1514	2.1	64		1403	1.7	52
	2155	7.9	241		2047	8.4	256
3 Su	0443	1.2	37	18 M	0340	0.7	21
	1050	5.6	171		0950	5.6	171
	1603	2.5	76		1501	2.2	67
	2237	8.2	250		2110	9.0	274
4 M	0531	0.5	15	19 Tu	0445	-0.3	-9
	1147	5.7	174		1107	5.8	177
	1652	2.7	82		1606	2.5	76
	2315	8.4	256		2236	9.6	293
5 Tu	0613	-0.1	-3	20 W	0544	-1.3	-40
	1237	5.9	180		1213	6.2	189
	1734	2.9	88		1707	2.5	76
	2352	8.7	265		2331	10.1	308
6 W	0652	-0.5	-15	21 Th	0640	-2.1	-64
	1320	6.1	186		1312	6.6	201
	1816	2.9	88		1808	2.4	73
7 Th	0029	8.9	271	22 F	0027	10.5	320
	0730	-0.9	-27		0731	-2.6	-79
	1400	6.3	192		1401	7.0	213
	1855	2.9	88		1904	2.2	67
8 F	0106	9.0	274	23 Sa	0119	10.6	323
	0805	-1.1	-34		0820	-2.7	-82
	1438	6.4	195		1450	7.3	223
	1930	2.9	88		1957	2.1	64
9 Sa	0142	9.1	277	24 Su	0211	10.5	320
	0840	-1.2	-37		0906	-2.6	-79
	1512	6.5	198		1535	7.5	229
	2012	2.9	88		2050	2.0	61
10 Su	0215	9.0	274	25 M	0257	10.0	305
	0915	-1.2	-37		0949	-2.2	-67
	1549	6.5	198		1621	7.6	232
	2048	2.9	88		2144	1.9	58
11 M	0253	8.8	268	26 Tu	0347	9.3	283
	0951	-1.1	-34		1032	-1.5	-46
	1627	6.6	201		1703	7.7	235
	2130	3.0	91		2239	2.0	61
12 Tu	0328	8.5	259	27 W	0437	8.4	256
	1026	-0.8	-24		1112	-0.7	-21
	1703	6.7	204		1748	7.8	238
	2213	3.0	91		2335	2.1	64
13 W	0407	8.1	247	28 Th	0530	7.4	226
	1102	-0.5	-15		1153	0.2	6
	1741	6.8	207		1833	7.7	235
	2306	2.9	88				
14 Th	0456	7.5	229	29 F	0039	2.1	64
	1141	0.0	0		0625	6.4	195
	1820	7.1	216		1231	1.1	34
					1916	7.7	235
15 F	0007	2.7	82	30 Sa	0145	2.0	61
	0551	6.9	210		0734	5.5	168
	1223	0.5	15		1313	1.9	58
	1905	7.5	229		2005	7.7	235

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KODIAK, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0259	1.7	52	16 M	0201	1.0	30
	0855	5.0	152		0801	5.2	158
	1405	2.6	79		1316	2.2	67
	2056	7.8	238		2003	8.7	265
2 M	0406	1.3	40	17 Tu	0320	0.4	12
	1020	4.9	149		0940	5.1	155
	1458	3.1	94		1425	2.8	85
	2145	7.9	241		2111	9.0	274
3 Tu	0505	0.8	24	18 W	0433	-0.3	-9
	1134	5.1	155		1107	5.4	165
	1559	3.4	104		1544	3.1	94
	2235	8.1	247		2220	9.4	287
4 W	0552	0.2	6	19 Th	0539	-1.1	-34
	1227	5.4	165		1211	5.9	180
	1658	3.4	104		1657	2.9	88
	2324	8.4	256		2323	9.8	299
5 Th	0636	-0.3	-9	20 F	0633	-1.7	-52
	1309	5.8	177		1304	6.5	198
	1747	3.3	101		1803	2.5	76
6 F	0006	8.7	265	21 Sa	0021	10.1	308
	0712	-0.7	-21		0720	-2.2	-67
	1347	6.1	186		1349	7.1	216
	1837	3.1	94		1901	2.1	64
7 Sa	0048	9.0	274	22 Su	0113	10.3	314
	0747	-1.1	-34		0804	-2.3	-70
	1419	6.4	195		1431	7.6	232
	1917	2.8	85		1954	1.6	49
8 Su	0125	9.1	277	23 M	0200	10.1	308
	0822	-1.3	-40		0845	-2.1	-64
	1451	6.7	204		1510	7.9	241
	1958	2.6	79		2040	1.3	40
9 M	0202	9.2	280	24 Tu	0246	9.7	296
	0854	-1.4	-43		0922	-1.7	-52
	1523	7.0	213		1547	8.2	250
	2038	2.4	73		2128	1.2	37
10 Tu	0238	9.0	274	25 W	0331	9.0	274
	0927	-1.3	-40		0957	-1.0	-30
	1555	7.3	223		1624	8.3	253
	2117	2.2	67		2215	1.2	37
11 W	0316	8.7	265	26 Th	0415	8.1	247
	0957	-1.0	-30		1032	-0.2	-6
	1627	7.5	229		1701	8.2	250
	2202	2.0	61		2301	1.3	40
12 Th	0355	8.2	250	27 F	0500	7.1	216
	1027	-0.6	-18		1104	0.6	18
	1701	7.8	238		1735	8.1	247
	2250	1.8	55		2353	1.5	46
13 F	0441	7.5	229	28 Sa	0549	6.2	189
	1104	0.0	0		1135	1.5	46
	1738	8.0	244		1815	7.9	241
	2343	1.6	49				
14 Sa	0533	6.7	204	29 Su	0052	1.6	49
	1141	0.7	21		0647	5.3	162
	1816	8.3	253		1210	2.3	70
					1900	7.6	232
15 Su	0049	1.3	40	30 M	0201	1.7	52
	0639	5.9	180		0806	4.7	143
	1223	1.5	46		1255	3.0	91
	1905	8.5	259		1953	7.5	229
				31 Tu	0321	1.5	46
					0948	4.5	137
					1354	3.6	110
					2057	7.5	229

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0433	1.1	34	16 Th	0428	-0.2	-6
	1115	4.8	146		1107	5.5	168
	1517	3.8	116		1643	3.3	101
	2203	7.7	235		2215	8.8	268
2 Th	0529	0.6	18	17 F	0531	-0.7	-21
	1208	5.2	158		1205	6.2	189
	1633	3.6	110		1702	2.8	85
	2259	8.1	247		2321	9.2	280
3 F	0613	0.0	0	18 Sa	0621	-1.2	-37
	1247	5.7	174		1248	6.9	210
	1731	3.3	101		1805	2.1	64
	2347	8.5	259				
4 Sa	0650	-0.5	-15	19 Su	0016	9.5	290
	1319	6.3	192		0703	-1.5	-46
	1821	2.8	85		1327	7.5	229
					1857	1.4	43
5 Su	0029	8.9	271	20 M	0106	9.6	293
	0723	-0.9	-27		0742	-1.5	-46
	1349	6.8	207		1402	8.1	247
	1902	2.3	70		1944	0.9	27
6 M	0109	9.1	277	21 Tu	0150	9.5	290
	0755	-1.2	-37		0816	-1.3	-40
	1419	7.3	223		1436	8.5	259
	1942	1.8	55		2026	0.5	15
7 Tu	0148	9.2	280	22 W	0232	9.1	277
	0823	-1.3	-40		0849	-0.8	-24
	1447	7.7	235		1506	8.7	265
	2021	1.4	43		2108	0.3	9
8 W	0226	9.1	277	23 Th	0312	8.5	259
	0853	-1.1	-34		0920	-0.2	-6
	1515	8.1	247		1538	8.7	265
	2102	1.0	30		2147	0.3	9
9 Th	0304	8.8	268	24 F	0353	7.7	235
	0925	-0.8	-24		0948	0.5	15
	1545	8.5	259		1608	8.5	259
	2143	0.7	21		2227	0.5	15
10 F	0346	8.2	250	25 Sa	0432	6.9	210
	0955	-0.2	-6		1017	1.3	40
	1616	8.7	265		1640	8.3	253
	2229	0.5	15		2311	0.8	24
11 Sa	0431	7.4	226	26 Su	0515	6.1	186
	1030	0.5	15		1045	2.0	61
	1653	8.8	268		1712	7.9	241
	2324	0.4	12				
12 Su	0524	6.5	198	27 M	0002	1.2	37
	1106	1.3	40		0608	5.3	162
	1735	8.8	268		1117	2.7	82
					1754	7.5	229
13 M	0026	0.5	15	28 Tu	0105	1.6	49
	0630	5.6	171		0721	4.6	140
	1149	2.1	64		1157	3.3	101
	1828	8.7	265		1847	7.2	219
14 Tu	0139	0.6	18	29 W	0225	1.7	52
	0758	5.0	152		0917	4.5	137
	1247	2.8	85		1303	3.8	116
	1937	8.5	259		2005	7.0	213
15 W	0308	0.3	9	30 Th	0351	1.4	43
	0948	5.0	152		1043	4.8	146
	1409	3.3	101		1446	4.0	122
	2055	8.5	259		2127	7.2	219
				31 F	0451	0.9	27
					1136	5.4	165
					1614	3.6	110
					2233	7.6	232

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0537	0.3	9	16 Su	0558	-0.5	-15
	1209	6.0	183		1219	7.5	229
	1714	3.0	91		1804	1.4	43
	2323	8.1	247				
2 Su	0613	-0.2	-6	17 M	0011	8.7	265
	1238	6.7	204		0637	-0.5	-15
	1800	2.3	70		1254	9.1	247
					1850	0.6	18
3 M	0008	8.6	262	18 Tu	0057	8.8	268
	0645	-0.5	-15		0712	-0.4	-12
	1305	7.4	226		1326	8.6	262
	1842	1.5	46		1930	0.0	0
4 Tu	0050	8.9	271	19 W	0138	8.6	262
	0717	-0.7	-21		0743	-0.1	-3
	1333	8.0	244		1357	8.9	271
	1922	0.7	21		2007	-0.3	-9
5 W	0131	9.0	274	20 Th	0218	8.3	253
	0747	-0.7	-21		0812	0.3	9
	1402	8.6	262		1426	9.0	274
	2001	0.0	0		2042	-0.5	-15
6 Th	0210	8.9	271	21 F	0254	7.9	241
	0819	-0.5	-15		0841	0.8	24
	1433	9.1	277		1454	9.0	274
	2042	-0.5	-15		2118	-0.4	-12
7 F	0252	8.5	259	22 Sa	0333	7.3	223
	0851	-0.1	-3		0909	1.4	43
	1504	9.4	287		1520	8.7	265
	2126	-0.8	-24		2155	-0.2	-6
8 Sa	0335	8.0	244	23 Su	0410	6.7	204
	0923	0.5	15		0938	2.0	61
	1539	9.5	290		1551	8.4	256
	2213	-0.8	-24		2234	0.2	6
9 Su	0424	7.2	219	24 M	0452	6.0	183
	1001	1.2	37		1006	2.6	79
	1618	9.4	287		1624	8.0	244
	2305	-0.5	-15		2320	0.7	21
10 M	0520	6.3	192	25 Tu	0541	5.3	162
	1040	2.0	61		1035	3.1	94
	1704	9.0	274		1701	7.5	229
11 Tu	0007	-0.1	-3	26 W	0015	1.2	37
	0631	5.5	168		0652	4.9	149
	1129	2.7	82		1124	3.6	110
	1804	8.6	262		1754	7.1	216
12 W	0124	0.3	9	27 Th	0128	1.5	46
	0806	5.1	155		0828	4.8	146
	1241	3.4	104		1234	4.0	122
	1921	8.1	247		1912	6.7	204
13 Th	0253	0.3	9	28 F	0250	1.5	46
	0945	5.4	165		0956	5.1	155
	1424	3.6	110		1422	4.0	122
	2053	8.0	244		2041	6.7	204
14 F	0412	0.1	3	29 Sa	0356	1.2	37
	1054	6.0	183		1043	5.7	174
	1558	3.1	94		1550	3.5	107
	2213	8.2	250		2157	7.0	213
15 Sa	0511	-0.2	-6	30 Su	0445	0.8	24
	1144	6.8	207		1118	6.5	198
	1710	2.3	70		1650	2.6	79
	2318	8.5	259		2254	7.5	229

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 M	0526	0.4	12	16 Tu	0000	7.7	235
	1150	7.2	219		0601	0.6	18
	1739	1.6	49		1219	8.6	262
	2345	7.9	241		1837	0.0	0
2 Tu	0600	0.2	6	17 W	0046	7.7	235
	1219	8.1	247		0636	0.8	24
	1821	0.5	15		1250	9.0	274
					1913	-0.5	-15
3 W	0031	8.3	253	18 Th	0127	7.7	235
	0635	0.1	3		0708	1.1	34
	1249	8.8	268		1317	9.2	280
	1901	-0.5	-15		1948	-0.9	-27
4 Th	0114	8.5	259	19 F	0204	7.5	229
	0709	0.1	3		0736	1.4	43
	1321	9.5	290		1345	9.2	280
	1943	-1.3	-40		2024	-1.0	-30
5 F	0159	8.4	256	20 Sa	0241	7.2	219
	0743	0.4	12		0808	1.8	55
	1354	10.0	305		1413	9.1	277
	2026	-1.8	-55		2055	-0.9	-27
6 Sa	0243	8.1	247	21 Su	0318	6.9	210
	0818	0.8	24		0837	2.2	67
	1432	10.2	311		1444	8.9	271
	2112	-2.0	-61		2131	-0.7	-21
7 Su	0331	7.6	232	22 M	0355	6.5	198
	0857	1.3	40		0905	2.6	79
	1511	10.1	308		1515	8.6	262
	2200	-1.7	-52		2209	-0.3	-9
8 M	0421	7.0	213	23 Tu	0437	6.0	183
	0939	1.9	58		0941	3.0	91
	1555	9.7	296		1549	8.1	247
	2253	-1.2	-37		2251	0.2	6
9 Tu	0522	6.3	192	24 W	0527	5.6	171
	1025	2.5	76		1016	3.4	104
	1647	9.1	277		1627	7.7	235
	2356	-0.6	-18		2340	0.6	18
10 W	0634	5.8	177	25 Th	0630	5.3	162
	1127	3.1	94		1106	3.7	113
	1749	8.3	253		1714	7.1	216
11 Th	0110	0.0	0	26 F	0036	1.0	30
	0801	5.7	174		0739	5.3	162
	1253	3.5	107		1215	3.9	119
	1912	7.7	235		1820	6.7	204
12 F	0227	0.3	9	27 Sa	0143	1.2	37
	0923	6.1	186		0848	5.7	174
	1436	3.3	101		1351	3.8	116
	2045	7.3	223		1946	6.4	195
13 Sa	0340	0.4	12	28 Su	0244	1.3	40
	1019	6.7	204		0937	6.3	192
	1604	2.6	79		1519	3.1	94
	2204	7.4	226		2111	6.4	195
14 Su	0436	0.5	15	29 M	0338	1.2	37
	1107	7.4	226		1017	7.0	213
	1707	1.7	52		1621	2.1	64
	2307	7.5	229		2222	6.7	204
15 M	0522	0.5	15	30 Tu	0426	1.1	34
	1145	8.1	247		1054	7.9	241
	1755	0.8	24		1710	0.9	27
					2320	7.1	216
				31 W	0511	1.1	34
					1129	8.7	265
					1758	-0.3	-9

NOVEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Th	0011	7.5	229	16 F	0120	6.8	207
	0550	1.1	34		0633	2.2	67
	1205	9.5	290		1245	9.1	277
	1843	-1.4	-43		1933	-1.0	-30
2 F	0101	7.7	235	17 Sa	0155	6.8	207
	0632	1.1	34		0707	2.4	73
	1243	10.2	311		1317	9.2	280
	1926	-2.2	-67		2007	-1.2	-37
3 Sa	0149	7.8	238	18 Su	0234	6.7	204
	0714	1.3	40		0743	2.5	76
	1323	10.6	323		1349	9.1	277
	2011	-2.6	-79		2040	-1.2	-37
4 Su	0236	7.6	232	19 M	0309	6.6	201
	0756	1.5	46		0815	2.7	82
	1405	10.7	326		1421	9.0	274
	2100	-2.7	-82		2115	-1.0	-30
5 M	0328	7.4	226	20 Tu	0348	6.4	195
	0840	1.8	55		0848	2.9	88
	1451	10.5	320		1453	8.7	265
	2149	-2.3	-70		2154	-0.7	-21
6 Tu	0421	7.0	213	21 W	0429	6.3	192
	0928	2.2	67		0925	3.1	94
	1540	9.9	302		1527	8.4	256
	2242	-1.7	-52		2231	-0.4	-12
7 W	0517	6.7	204	22 Th	0509	6.1	186
	1024	2.6	79		1017	3.3	101
	1636	9.1	277		1607	7.9	241
	2341	-1.0	-30		2309	0.0	0
8 Th	0623	6.5	198	23 F	0554	6.1	186
	1132	3.0	91		1056	3.5	107
	1741	8.2	250		1648	7.4	226
					2354	0.4	12
9 F	0041	-0.2	-6	24 Sa	0643	6.2	189
	0732	6.5	198		1159	3.5	107
	1255	3.1	94		1745	6.8	207
	1857	7.3	223				
10 Sa	0147	0.4	12	25 Su	0041	0.8	24
	0838	6.9	210		0735	6.5	198
	1429	2.8	85		1313	3.2	98
	2023	6.7	204		1856	6.2	189
11 Su	0251	0.9	27	26 M	0132	1.2	37
	0937	7.4	226		0823	7.0	213
	1548	2.1	64		1433	2.6	79
	2145	6.4	195		2022	5.9	180
12 M	0348	1.3	40	27 Tu	0226	1.6	49
	1025	7.9	241		0913	7.6	232
	1651	1.2	37		1545	1.6	49
	2254	6.4	195		2145	5.9	180
13 Tu	0438	1.6	49	28 W	0323	1.8	55
	1102	8.3	253		0958	8.4	256
	1739	0.4	12		1643	0.4	12
	2350	6.6	201		2257	6.2	189
14 W	0520	1.8	55	29 Th	0417	2.0	61
	1139	8.7	265		1043	9.1	277
	1821	-0.2	-6		1736	-0.8	-24
15 Th	0037	6.7	204	30 F	0000	6.5	198
	0600	2.0	61		0511	2.0	61
	1213	9.0	274		1130	9.9	302
	1857	-0.7	-21		1827	-1.8	-55

DECEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Sa	0053	6.9	210	16 Su	0151	6.3	192
	0603	2.0	61		0645	2.9	88
	1216	10.5	320		1256	9.1	277
	1917	-2.5	-76		1956	-1.2	-37
2 Su	0143	7.2	219	17 M	0227	6.5	198
	0652	2.0	61		0724	2.8	85
	1304	10.8	329		1333	9.1	277
	2003	-2.9	-88		2030	-1.3	-40
3 M	0235	7.3	223	18 Tu	0302	6.6	201
	0741	1.9	58		0803	2.8	85
	1353	10.9	332		1405	9.1	277
	2052	-3.0	-91		2102	-1.3	-40
4 Tu	0321	7.4	226	19 W	0334	6.7	204
	0833	2.0	61		0839	2.7	82
	1442	10.6	323		1440	8.9	271
	2139	-2.6	-79		2134	-1.1	-34
5 W	0411	7.3	223	20 Th	0408	6.8	207
	0926	2.1	64		0917	2.8	85
	1534	10.0	305		1515	8.6	262
	2228	-2.0	-61		2207	-0.9	-27
6 Th	0502	7.3	223	21 F	0440	6.8	207
	1021	2.3	70		0957	2.8	85
	1625	9.1	277		1551	8.2	250
	2317	-1.2	-37		2239	-0.5	-15
7 F	0554	7.3	223	22 Sa	0517	6.9	210
	1125	2.4	73		1042	2.7	82
	1725	8.0	244		1629	7.6	232
					2314	0.0	0
8 Sa	0007	-0.3	-9	23 Su	0553	7.1	216
	0649	7.4	226		1135	2.6	79
	1238	2.5	76		1719	6.9	210
	1831	6.9	210		2349	0.6	18
9 Su	0057	0.6	18	24 M	0641	7.4	226
	0745	7.5	229		1239	2.4	73
	1359	2.3	70		1820	6.1	186
	1948	6.0	183				
10 M	0149	1.4	43	25 Tu	0033	1.2	37
	0839	7.7	235		0716	7.7	235
	1517	1.8	55		1350	1.9	58
	2113	5.5	168		1938	5.5	168
11 Tu	0245	2.1	64	26 W	0121	1.8	55
	0930	8.0	244		0810	8.1	247
	1626	1.2	37		1506	1.1	34
	2233	5.4	165		2112	5.2	158
12 W	0343	2.6	79	27 Th	0224	2.4	73
	1017	8.2	250		0906	8.6	262
	1720	0.5	15		1618	0.2	6
	2336	5.6	171		2241	5.4	165
13 Th	0436	2.9	88	28 F	0329	2.7	82
	1102	8.5	259		1006	9.2	280
	1805	-0.1	-3		1721	-0.8	-24
					2353	5.8	177
14 F	0029	5.9	180	29 Sa	0439	2.8	85
	0523	3.0	91		1106	9.8	299
	1142	8.7	265		1815	-1.8	-55
	1845	-0.6	-18				
15 Sa	0114	6.1	186	30 Su	0050	6.4	195
	0608	3.0	91		0544	2.6	79
	1221	8.9	271		1203	10.4	317
	1921	-0.9	-27		1909	-2.4	-73
				31 M	0140	6.9	210
					0640	2.2	67
					1256	10.7	326
					1956	-2.8	-85

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

UNALASKA, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 M	0231	0.4	12	16 Tu	0345	1.3	40
	1033	3.9	119		1050	4.0	122
	1636	2.8	85		1751	1.4	43
	1946	3.0	91		2327	2.8	85
2 Tu	0309	0.8	24	17 W	0435	1.8	55
	1043	4.0	122		1115	4.0	122
	1718	2.1	64		1830	1.0	30
	2147	2.7	82				
3 W	0348	1.4	43	18 Th	0059	2.9	88
	1057	4.1	125		0521	2.3	70
	1800	1.3	40		1133	3.9	119
	2342	2.7	82		1909	0.6	18
4 Th	0427	1.9	58	19 F	0222	3.1	94
	1115	4.3	131		0603	2.7	82
	1842	0.6	18		1152	3.9	119
					1948	0.3	9
5 F	0124	2.8	85	20 Sa	0331	3.2	98
	0559	2.4	73		0642	3.0	91
	1141	4.6	140		1207	3.9	119
	1926	-0.1	-3		2023	0.1	3
6 Sa	0301	3.1	94	21 Su	0444	3.4	104
	0547	2.9	88		0710	3.3	101
	1213	4.8	146		1229	4.0	122
	2015	-0.6	-18		2102	0.0	0
7 Su	0427	3.3	101	22 M	1247	4.1	125
	0636	3.2	98		2137	-0.1	-3
	1252	4.9	149				
	2105	-0.9	-27				
8 M	1337	4.9	149	23 Tu	1315	4.2	128
	2156	-1.1	-34		2212	-0.2	-6
9 Tu	0635	3.7	113	24 W	1344	4.2	128
	0839	3.6	110		2248	-0.2	-6
	1426	4.8	146				
	2248	-1.1	-34				
10 W	0730	3.8	116	25 Th	1422	4.2	128
	1001	3.6	110		2322	-0.2	-6
	1519	4.6	140				
	2339	-0.9	-27				
11 Th	0808	3.9	119	26 F	0800	3.5*	107*
	1132	3.6	110		1504	4.0	122
	1617	4.3	131				
12 F	0031	-0.6	-18	27 Sa	0002	0.0	0
	0847	3.9	119		0849	3.5	107
	1312	3.3	101		1131	3.4	104
	1723	3.9	119		1603	3.8	116
13 Sa	0121	-0.2	-6	28 Su	0038	0.2	6
	0919	4.0	122		0847	3.5	107
	1448	3.0	91		1311	3.0	91
	1840	3.4	104		1719	3.4	104
14 Su	0209	0.2	6	29 M	0116	0.6	18
	0951	4.0	122		0855	3.5	107
	1557	2.5	76		1427	2.5	76
	2012	3.0	91		1902	3.0	91
15 M	0259	0.8	24	30 Tu	0159	1.0	30
	1024	4.0	122		0912	3.7	113
	1702	1.9	58		1533	1.8	55
	2151	2.8	85		2054	2.8	85
				31 W	0245	1.5	46
					0930	3.9	119
					1632	1.0	30
					2243	2.8	85

FEBRUARY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Th	0329	2.0	61	16 F	0054	3.1	94
	0958	4.1	125		0512	2.6	79
	1723	0.4	12		1031	3.4	104
					1820	0.4	12
2 F	0024	3.0	91	17 Sa	0200	3.2	98
	0421	2.5	76		0554	2.8	85
	1034	4.3	131		1054	3.5	107
	1816	-0.2	-6		1900	0.2	6
3 Sa	0146	3.2	98	18 Su	0252	3.3	101
	0517	2.8	85		0630	3.0	91
	1113	4.5	137		1122	3.6	110
	1908	-0.6	-18		1936	0.0	0
4 Su	0258	3.3	101	19 M	0347	3.3	101
	0609	3.0	91		0655	3.1	94
	1159	4.6	140		1152	3.7	113
	2000	-0.9	-27		2016	-0.1	-3
5 M	0358	3.4	104	20 Tu	0443	3.2	98
	0705	3.2	98		0707	3.1	94
	1247	4.6	140		1221	3.8	116
	2051	-1.0	-30		2052	-0.2	-6
6 Tu	0457	3.5	107	21 W	1256	3.9	119
	0801	3.2	98		2128	-0.1	-3
	1339	4.5	137				
	2142	-0.9	-27				
7 W	0549	3.5	107	22 Th	1338	3.9	119
	0907	3.2	98		2206	-0.1	-3
	1431	4.3	131				
	2231	-0.6	-18				
8 Th	0630	3.5	107	23 F	0618	3.0	91
	1018	3.1	94		0854	2.9	88
	1527	4.0	122		1427	3.8	116
	2321	-0.3	-9		2241	0.1	3
9 F	0713	3.5	107	24 Sa	0624	3.0	91
	1139	2.9	88		1004	2.6	79
	1629	3.7	113		1530	3.6	110
					2317	0.4	12
10 Sa	0006	0.1	3	25 Su	0634	3.0	91
	0750	3.5	107		1120	2.2	67
	1300	2.6	79		1645	3.3	101
	1739	3.3	101		2359	0.8	24
11 Su	0056	0.6	18	26 M	0649	3.1	94
	0822	3.5	107		1239	1.7	52
	1415	2.2	67		1818	3.0	91
	1906	2.9	88				
12 M	0143	1.0	30	27 Tu	0044	1.3	40
	0852	3.4	104		0713	3.3	101
	1517	1.8	55		1345	1.1	34
	2043	2.8	85		2005	2.9	88
13 Tu	0236	1.5	46	28 W	0136	1.8	55
	0918	3.4	104		0745	3.5	107
	1610	1.4	43		1452	0.5	15
	2218	2.8	85		2146	3.0	91
14 W	0324	1.9	58				
	0944	3.4	104				
	1656	1.0	30				
	2342	2.9	88				
15 Th	0421	2.3	70				
	1007	3.4	104				
	1738	0.6	18				

MARCH

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Th	0235	2.2	67	16 F	0438	2.6	79
	0824	3.7	113		0833	2.9	88
	1552	-0.1	-3		1638	0.2	6
	2313	3.2	98				
2 F	0334	2.5	76	17 Sa	0035	3.3	101
	0910	3.9	119		0524	2.7	82
	1651	-0.5	-15		0911	3.0	91
					1722	0.1	3
3 Sa	0028	3.3	101	18 Su	0124	3.3	101
	0436	2.7	82		0600	2.8	85
	1005	4.1	125		0948	3.1	94
	1748	-0.8	-24		1804	0.0	0
4 Su	0131	3.4	104	19 M	0212	3.3	101
	0539	2.8	85		0627	2.8	85
	1059	4.2	128		1029	3.2	98
	1845	-1.0	-30		1845	-0.1	-3
5 M	0226	3.5	107	20 Tu	0250	3.2	98
	0635	2.8	85		0649	2.8	85
	1156	4.2	128		1107	3.3	101
	1939	-0.9	-27		1924	-0.1	-3
6 Tu	0317	3.4	104	21 W	0327	3.1	94
	0733	2.7	82		0710	2.8	85
	1252	4.1	125		1149	3.3	101
	2032	-0.7	-21		1959	0.0	0
7 W	0404	3.4	104	22 Th	0349	3.0	91
	0833	2.6	79		0739	2.6	79
	1350	3.9	119		1244	3.4	104
	2124	-0.4	-12		2035	0.1	3
8 Th	0449	3.3	101	23 F	0402	2.9	88
	0936	2.4	73		0821	2.3	70
	1449	3.6	110		1336	3.3	101
	2210	0.0	0		2107	0.4	12
9 F	0525	3.2	98	24 Sa	0412	2.8	85
	1036	2.2	67		0913	1.9	58
	1555	3.3	101		1443	3.1	94
	2258	0.5	15		2145	0.7	21
10 Sa	0603	3.1	94	25 Su	0423	2.9	88
	1142	1.9	58		1009	1.4	43
	1705	3.0	91		1608	3.0	91
	2342	1.0	30		2224	1.2	37
11 Su	0629	3.0	91	26 M	0442	3.0	91
	1241	1.6	49		1111	0.9	27
	1829	2.8	85		1737	2.9	88
					2316	1.7	52
12 M	0033	1.4	43	27 Tu	0511	3.2	98
	0655	2.9	88		1210	0.3	9
	1339	1.3	40		1915	3.0	91
	2002	2.7	82				
13 Tu	0128	1.9	58	28 W	0012	2.1	64
	0718	2.9	88		0550	3.4	104
	1425	1.0	30		1316	-0.3	-9
	2128	2.8	85		2046	3.1	94
14 W	0231	2.2	67	29 Th	0117	2.5	76
	0739	2.9	88		0636	3.6	110
	1511	0.7	21		1418	-0.7	-21
	2244	3.0	91		2211	3.4	104
15 Th	0339	2.4	73	30 F	0230	2.7	82
	0801	2.9	88		0729	3.7	113
	1553	0.4	12		1522	-1.0	-30
	2343	3.2	98		2314	3.5	107
				31 Sa	0342	2.7	82
					0835	3.8	116
					1622	-1.2	-37

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

UNALASKA, ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Su	0010	3.6	110	16 M	0052	3.4	104
	0451	2.7	82		0613	2.7	82
	0942	3.8	116		0819	2.8	85
	1722	-1.1	-34		1707	-0.2	-6
2 M	0101	3.6	110	17 Tu	0126	3.4	104
	0553	2.5	76		0631	2.7	82
	1048	3.7	113		0918	2.8	85
	1818	-1.0	-30		1749	-0.1	-3
3 Tu	0149	3.6	110	18 W	0152	3.3	101
	0652	2.3	70		0649	2.6	79
	1157	3.6	110		1024	2.8	85
	1914	-0.7	-21		1825	0.0	0
4 W	0232	3.5	107	19 Th	0211	3.1	94
	0754	2.0	61		0711	2.3	70
	1303	3.4	104		1127	2.8	85
	2004	-0.2	-6		1900	0.2	6
5 Th	0311	3.4	104	20 F	0221	3.0	91
	0853	1.7	52		0743	1.9	58
	1412	3.1	94		1239	2.7	82
	2053	0.3	9		1932	0.6	18
6 F	0346	3.3	101	21 Sa	0227	3.0	91
	0949	1.4	43		0825	1.4	43
	1522	2.9	88		1357	2.7	82
	2139	0.8	24		2004	1.0	30
7 Sa	0415	3.1	94	22 Su	0238	3.1	94
	1041	1.1	34		0911	0.8	24
	1641	2.7	82		1524	2.6	79
	2229	1.4	43		2043	1.5	46
8 Su	0439	3.0	91	23 M	0254	3.3	101
	1130	0.9	27		1000	0.2	6
	1809	2.7	82		1655	2.7	82
	2318	1.9	58		2131	2.0	61
9 M	0454	2.8	85	24 Tu	0322	3.5	107
	1215	0.6	18		1057	-0.4	-12
	1935	2.8	85		1829	2.4	88
					2227	2.5	76
10 Tu	0018	2.3	70	25 W	0358	3.7	113
	0502	2.8	85		1154	-0.9	-27
	1254	0.4	12		1955	3.2	98
	2054	2.9	88		2336	2.8	85
11 W	0133	2.6	79	26 Th	0447	3.8	116
	0456	2.7	82		1253	-1.3	-40
	1336	0.2	6		2104	3.4	104
	2157	3.1	94				
12 Th	0700	2.6*	79*	27 F	0102	3.0	91
	1415	0.1	3		0544	3.8	116
	2249	3.3	101		1355	-1.5	-46
					2206	3.6	110
13 F	0600	2.8*	85*	28 Sa	0225	3.0	91
	1458	-0.1	-3		0655	3.7	113
	2338	3.4	104		1457	-1.5	-46
					2258	3.7	113
14 Sa	1541	-0.1	-3	29 Su	0341	2.8	85
					0808	3.6	110
					1556	-1.4	-43
					2343	3.8	116
15 Su	0015	3.4	104	30 M	0452	2.5	76
	1627	-0.2	-6		0924	3.4	104
					1654	-1.1	-34

MAY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Tu	0029	3.8	116	16 W	0040	3.5	107
	0558	2.1	64		1651	0.0	0
	1043	3.2	98				
	1747	-0.6	-21				
2 W	0111	3.7	113	17 Th	0053	3.4	104
	0703	1.7	52		0645	2.3	70
	1159	3.0	91		0955	2.4	73
	1841	-0.1	-3		1726	0.3	9
3 Th	0147	3.7	113	18 F	0101	3.3	101
	0801	1.3	40		0708	1.8	55
	1320	2.7	82		1131	2.3	70
	1930	0.5	15		1754	0.7	21
4 F	0219	3.5	107	19 Sa	0104	3.3	101
	0854	0.9	27		0740	1.2	37
	1441	2.6	79		1304	2.3	70
	2015	1.1	34		1830	1.2	37
5 Sa	0245	3.4	104	20 Su	0112	3.5	107
	0943	0.5	15		0817	0.5	15
	1609	2.6	79		1442	2.3	70
	2105	1.7	52		1904	1.8	55
6 Su	0305	3.2	98	21 M	0129	3.7	113
	1029	0.3	9		0901	-0.2	-6
	1739	2.7	82		1616	2.6	79
	2151	2.2	67		1943	2.3	70
7 M	0313	3.1	94	22 Tu	0152	3.9	119
	1108	0.0	0		0951	-0.8	-24
	1908	2.9	88		1751	2.8	85
	2242	2.6	79		2032	2.7	82
8 Tu	0310	3.0	91	23 W	0231	4.1	125
	1143	-0.1	-3		1043	-1.3	-40
	2024	3.1	94		1910	3.1	94
					2137	3.0	91
9 W	0005	2.9	88	24 Th	0315	4.2	128
	0257	3.0	91		1139	-1.6	-49
	1215	-0.2	-6		2010	3.4	104
	2130	3.3	101		2300	3.2	98
10 Th	0500	2.9*	88*	25 F	0412	4.2	128
	1252	-0.3	-9		1237	-1.8	-55
	2212	3.4	104		2106	3.6	110
11 F	0500	3.0*	91*	26 Sa	0038	3.2	98
	1332	-0.4	-12		0515	4.0	122
	2254	3.5	107		1334	-1.7	-52
					2148	3.7	113
12 Sa	0500	3.0*	91*	27 Su	0209	3.0	91
	1414	-0.4	-12		0630	3.7	113
	2319	3.6	110		1431	-1.5	-46
					2233	3.8	116
13 Su	1455	-0.4	-12	28 M	0334	2.7	82
	2351	3.6	110		0749	3.4	104
					1529	-1.1	-34
					2312	3.9	119
14 M	1536	-0.4	-12	29 Tu	0450	2.2	67
					0912	3.1	94
					1621	-0.7	-21
					2351	3.9	119
15 Tu	0016	3.5	107	30 W	0556	1.7	52
	1615	-0.2	-6		1042	2.8	85
					1714	-0.1	-3
				31 Th	0026	3.9	119
					0658	1.2	37
					1210	2.5	76
					1803	0.6	18

JUNE

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 F	0059	3.8	116	16 Sa	0648	1.1	34
	0754	0.7	21		1211	2.1	64
	1341	2.5	76		1704	1.4	43
	1851	1.2	37				
2 Sa	0125	3.7	113	17 Su	0001	3.7	113
	0839	0.3	9		0719	0.4	12
	1511	2.5	76		1357	2.2	67
	1937	1.8	55		1736	1.9	58
3 Su	0145	3.5	107	18 M	0020	3.9	119
	0923	-0.1	-3		0802	-0.3	-9
	1641	2.7	82		1542	2.5	76
	2023	2.3	70		1812	2.4	73
4 M	0159	3.4	104	19 Tu	0045	4.2	128
	1002	-0.3	-9		0847	-0.9	-27
	1811	2.9	88				
	2109	2.8	85				
5 Tu	0203	3.3	101	20 W	0121	4.4	134
	1037	-0.4	-12		0939	-1.4	-43
	1933	3.1	94				
	2156	3.0	91				
6 W	0201	3.3	101	21 Th	0206	4.5	137
	1109	-0.5	-15		1030	-1.6	-49
	1800	2.9*	88*				
7 Th	0148	3.4	104	22 F	0258	4.4	134
	1145	-0.5	-15		1124	-1.7	-52
	2138	3.4	104		2001	3.4	104
					2238	3.3	101
8 F	0009	3.3	101	23 Sa	0356	4.3	131
	0149	3.4	104		1220	-1.6	-49
	1221	-0.6	-18		2040	3.5	107
	2217	3.5	107				
9 Sa	0500	3.1*	94*	24 Su	0018	3.2	98
	1258	-0.6	-18		0505	4.0	122
	2244	3.6	110		1314	-1.4	-43
					2123	3.6	110
10 Su	0500	3.2*	98*	25 M	0156	2.9	88
	1336	-0.5	-15		0618	3.6	110
	2303	3.6	110		1408	-1.0	-30
					2158	3.7	113
11 M	1415	-0.4	-12	26 Tu	0326	2.4	73
	2320	3.6	110		0741	3.1	94
					1500	-0.5	-15
					2234	3.8	116
12 Tu	1451	-0.3	-9	27 W	0438	1.9	58
	2331	3.5	107		0913	2.7	82
					1552	0.0	0
					2309	3.8	116
13 W	152*	0.0	0	28 Th	0544	1.3	40
	2339	3.5	107		1050	2.5	76
					1641	0.7	21
					2342	3.8	116
14 Th	0600	2.3	70	29 F	0636	0.7	21
	0820	2.4	73		1224	2.5	76
	1558	0.4	12		1733	1.3	40
	2343	3.5	107				
15 F	0616	1.7	52	30 Sa	0009	3.8	116
	1021	2.1	64		0725	0.3	9
	1630	0.9	27		1357	2.6	79
	2350	3.5	107		1822	1.8	55

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

UNALASKA, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height ft	Height cm
1 Su	0033	3.7	113
	0809	-0.1	-3
	1523	2.7	82
	1906	2.3	70
2 M	0053	3.6	110
	0848	-0.3	-9
	1643	2.9	88
	1953	2.7	82
3 Tu	0104	3.5	107
	0924	-0.4	-12
	1759	3.1	94
	2025	3.0	91
4 W	0119	3.5	107
	1003	-0.5	-15
	1800	3.1*	94*
5 Th	0129	3.6	110
	1038	-0.6	-18
	1900	3.2*	98*
6 F	0147	3.6	110
	1112	-0.6	-18
	1900	3.1*	94*
7 Sa	0211	3.6	110
	1150	-0.6	-18
	2000	3.3*	101*
8 Su	0236	3.6	110
	1226	-0.5	-15
	2209	3.4	104
9 M	0031	3.3	101
	0315	3.4	104
	1300	-0.4	-12
	2210	3.4	104
10 Tu	0600	3.0*	91*
	1337	-0.2	-6
	2214	3.4	104
11 W	1414	0.2	6
	2219	3.3	101
12 Th	0415	2.3	70
	0720	2.5	76
	1446	0.6	18
	2224	3.4	104
13 F	0451	1.7	52
	0923	2.2	67
	1521	1.1	34
	2233	3.5	107
14 Sa	0533	1.0	30
	1118	2.2	67
	1600	1.6	49
	2248	3.7	113
15 Su	0612	0.3	9
	1303	2.4	73
	1635	2.0	61
	2310	3.9	119
16 M	0657	-0.3	-9
	1434	2.6	79
	1717	2.4	73
	2342	4.2	128
17 Tu	0743	-0.8	-24
	1557	2.8	85
	1757	2.7	82
18 W	0021	4.4	134
	0834	-1.2	-37
19 Th	0107	4.5	137
	0924	-1.4	-43
	1755	3.1	94
	1954	3.0	91
20 F	0200	4.6	137
	1017	-1.5	-46
	1843	3.2	98
	2111	3.1	94
21 Sa	0255	4.3	131
	1109	-1.3	-40
	1922	3.3	101
	2237	3.0	91
22 Su	0357	4.0	122
	1201	-1.1	-34
	2000	3.3	101
23 M	0015	2.8	85
	0503	3.6	110
	1254	-0.7	-21
	2038	3.4	104
24 Tu	0141	2.4	73
	0624	3.2	98
	1342	-0.2	-6
	2113	3.5	107
25 W	0307	1.9	58
	0755	2.8	85
	1435	0.4	12
	2146	3.5	107
26 Th	0415	1.4	43
	0933	2.6	79
	1571	0.9	27
	2218	3.5	107
27 F	0510	0.9	27
	1109	2.6	79
	1622	1.4	43
	2248	3.5	107
28 Sa	0559	0.4	12
	1236	2.7	82
	1718	1.9	58
	2317	3.5	107
29 Su	0645	0.1	3
	1352	2.8	85
	1803	2.3	70
	2339	3.5	107
30 M	0724	-0.1	-3
	1501	3.0	91
	1853	2.6	79
31 Tu	0001	3.4	104
	0806	-0.3	-9
	1607	3.1	94
	1925	2.8	85

AUGUST

Day	Time	Height ft	Height cm
1 W	0025	3.5	107
	0845	-0.4	-12
	1709	3.1	94
	1954	3.0	91
2 Th	0047	3.5	107
	0924	-0.4	-12
	1800	3.1*	94*
3 F	0113	3.6	110
	1000	-0.4	-12
	1900	3.1*	94*
4 Sa	0141	3.6	110
	1035	-0.4	-12
	2000	3.1*	94*
5 Su	0216	3.6	110
	1111	-0.3	-9
	1900	3.0*	91*
6 M	0301	3.4	104
	1146	-0.1	-3
	2019	3.0	91
	2332	2.8	85
7 Tu	0357	3.2	98
	1221	0.2	6
	2021	3.0	91
8 W	0051	2.5	76
	0507	2.9	88
	1300	0.5	15
	2030	3.0	91
9 Th	0203	2.0	61
	0643	2.6	79
	1339	0.9	27
	2041	3.1	94
10 F	0303	1.4	43
	0838	2.5	76
	1421	1.4	43
	2101	3.3	101
11 Sa	0355	0.8	24
	1024	2.5	76
	1509	1.9	58
	2124	3.5	107
12 Su	0449	0.2	6
	1200	2.7	82
	1555	2.2	67
	2200	3.8	116
13 M	0539	-0.4	-12
	1319	2.9	88
	1647	2.6	79
	2239	4.0	122
14 Tu	0631	-0.8	-24
	1422	3.0	91
	1739	2.7	82
	2325	4.2	128
15 W	0723	-1.1	-34
	1524	3.1	94
	1829	2.8	85
16 Th	0017	4.3	131
	0816	-1.2	-37
	1613	3.1	94
	1927	2.8	85
17 F	0109	4.3	131
	0907	-1.1	-34
	1659	3.1	94
	2029	2.7	82
18 Sa	0204	4.1	125
	0958	-0.9	-27
	1745	3.1	94
	2137	2.6	79
19 Su	0303	3.9	119
	1050	-0.5	-15
	1822	3.1	94
	2257	2.4	73
20 M	0413	3.5	107
	1139	-0.1	-3
	1858	3.1	94
21 Tu	0015	2.1	64
	0529	3.1	94
	1231	0.4	12
	1933	3.1	94
22 W	0129	1.7	52
	0658	2.9	88
	1321	0.9	27
	2009	3.1	94
23 Th	0238	1.3	40
	0833	2.7	82
	1419	1.4	43
	2039	3.1	94
24 F	0332	0.9	27
	1006	2.8	85
	1518	1.8	55
	2110	3.1	94
25 Sa	0425	0.5	15
	1122	2.9	88
	1621	2.1	64
	2143	3.1	94
26 Su	0507	0.2	6
	1231	3.1	94
	1717	2.4	73
	2212	3.1	94
27 M	0553	0.0	0
	1330	3.2	98
	1803	2.5	76
	2243	3.2	98
28 Tu	0635	-0.1	-3
	1422	3.2	98
	1842	2.7	82
	2314	3.2	98
29 W	0717	-0.2	-6
	1518	3.2	98
	1912	2.8	85
	2346	3.3	101
30 Th	0758	-0.2	-6
	1600	3.1	94
	1935	2.8	85
31 F	0018	3.4	104
	0837	-0.2	-5
	1644	3.0	91
	2000	2.8	85

SEPTEMBER

Day	Time	Height ft	Height cm
1 Sa	0053	3.4	104
	0914	-0.1	-3
	1719	2.9	88
	2029	2.7	82
2 Su	0135	3.4	104
	0949	0.1	3
	1741	2.8	85
	2115	2.6	79
3 M	0221	3.3	101
	1021	0.3	9
	1752	2.8	85
	2208	2.3	70
4 Tu	0323	3.1	94
	1057	0.6	18
	1801	2.8	85
	2310	2.0	61
5 W	0442	2.9	88
	1135	1.0	30
	1816	2.9	88
6 Th	0015	1.5	46
	0613	2.8	85
	1218	1.5	46
	1838	3.0	91
7 F	0118	0.9	27
	0755	2.8	85
	1307	1.9	58
	1904	3.2	98
8 Sa	0217	0.4	12
	0933	2.9	88
	1405	2.3	70
	1942	3.4	104
9 Su	0318	-0.2	-6
	1053	3.1	94
	1511	2.6	79
	2029	3.6	110
10 M	0414	-0.6	-18
	1202	3.3	101
	1606	2.7	82
	2121	3.8	116
11 Tu	0511	-0.9	-27
	1301	3.4	104
	1709	2.8	85
	2218	3.9	119
12 W	0606	-1.0	-30
	1350	3.4	104
	1805	2.7	82
	2317	4.0	122
13 Th	0701	-1.0	-30
	1438	3.4	104
	1901	2.6	79
14 F	0018	3.9	119
	0755	-0.8	-24
	1522	3.3	101
	1958	2.4	73
15 Sa	0120	3.8	116
	0847	-0.4	-12
	1602	3.3	101
	2102	2.2	67
16 Su	0226	3.5	107
	0936	0.0	0
	1638	3.2	98
	2205	1.9	58
17 M	0335	3.3	101
	1022	0.5	15
	1712	3.1	94
	2312	1.6	49
18 Tu	0455	3.0	91
	1117	1.1	34
	1742	3.1	94
19 W	0011	1.2	37
	0623	2.9	88
	1209	1.6	49
	1811	3.0	91
20 Th	0105	0.9	27
	0756	2.9	88
	1312	2.0	61
	1837	2.9	88
21 F	0154	0.6	18
	0918	3.1	94
	1425	2.4	73
	1902	2.9	88
22 Sa	0240	0.4	12
	1028	3.3	101
	1540	2.6	79
	1930	2.9	88
23 Su	0329	0.2	6
	1127	3.4	104
	1642	2.7	82
	2006	2.9	88
24 M	0415	0.1	3
	1212	3.5	107
	1733	2.7	82
	2051	2.9	88
25 Tu	0459	0.0	0
	1257	3.5	107
	1815	2.8	85
	2136	3.0	91
26 W	0541	0.0	0
	1343	3.5	107
	1841	2.8	85
	2218	3.1	94
27 Th	0625	0.0	0
	1421	3.4	104
	1906	2.8	85
	2300	3.1	94
28 F	0704	0.1	3
	1453	3.3	101
	1928	2.7	82
	2342	3.1	94
29 Sa	0739	0.2	6
	1518	3.2	98
	1959	2.5	76
30 Su	0038	3.1	94
	0811	0.5	15
	1535	3.1	94
	2035	2.3	70

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

UNALASKA, ALASKA, 1990

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 M	0130	3.0	91	16 Tu	0427	3.0	91
	0847	0.8	24		0952	1.7	52
	1544	3.0	91		1600	3.4	104
	2112	1.9	58		2307	0.8	24
2 Tu	0243	2.9	88	17 W	0558	3.0	91
	0915	1.2	37		1048	2.3	70
	1553	3.0	91		1616	3.3	101
	2205	1.4	43		2351	0.5	15
3 W	0403	2.9	88	18 Th	0729	3.2	98
	0957	1.6	49		1154	2.7	82
	1608	3.2	98		1627	3.2	98
	2254	0.9	27				
4 Th	0534	2.9	88	19 F	0034	0.3	9
	1036	2.1	64		0848	3.4	104
	1629	3.3	101		1322	3.0	91
	2347	0.3	9		1631	3.1	94
5 F	0712	3.0	91	20 Sa	0113	0.2	6
	1135	2.5	76		0954	3.6	110
	1702	3.5	107		1700	3.1*	94*
6 Sa	0046	-0.2	-6	21 Su	0155	0.1	3
	0843	3.3	101		1036	3.7	113
	1244	2.9	88				
	1748	3.7	113				
7 Su	0145	-0.6	-18	22 M	0239	0.0	0
	0955	3.6	107		1118	3.8	116
	1357	3.1	94				
	1841	3.8	116				
8 M	0246	-0.9	-27	23 Tu	0322	0.0	0
	1051	3.7	113		1157	3.9	119
	1512	3.1	94				
	1946	3.9	119				
9 Tu	0345	-1.0	-30	24 W	0405	0.0	0
	1143	3.8	116		1231	3.8	116
	1617	3.0	91				
	2056	3.9	119				
10 W	0444	-1.0	-30	25 Th	0447	0.1	3
	1232	3.9	119		1303	3.8	116
	1723	2.8	85		1849	2.9	88
	2208	3.8	116		2102	3.0	91
11 Th	0540	-0.8	-24	26 F	0526	0.2	6
	1315	3.8	116		1329	3.7	113
	1822	2.5	76		1907	2.7	82
	2317	3.7	113		2204	2.9	88
12 F	0634	-0.5	-15	27 Sa	0601	0.4	12
	1354	3.8	116		1349	3.6	110
	1923	2.2	67		1936	2.5	76
					2317	2.8	85
13 Sa	0028	3.5	107	28 Su	0633	0.7	21
	0726	-0.1	-3		1401	3.5	107
	1433	3.7	113		1957	2.1	64
	2023	1.8	55				
14 Su	0142	3.3	101	29 M	0033	2.7	82
	0815	0.5	15		0705	1.1	34
	1505	3.6	110		1404	3.5	107
	2119	1.4	43		2026	1.7	52
15 M	0303	3.1	94	30 Tu	0155	2.7	82
	0902	1.1	34		0730	1.6	49
	1534	3.5	107		1412	3.5	107
	2216	1.1	34		2101	1.1	34
				31 W	0324	2.8	85
					0809	2.1	64
					1423	3.7	113
					2147	0.5	15

NOVEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Th	0500	2.9	88	16 F	0818	3.6	110
	0841	2.6	79		1142	3.5	107
	1445	3.9	119		1444	3.6	110
	2236	-0.1	-3				
2 F	0633	3.2	98	17 Sa	0005	0.0	0
	0927	3.0	91		0917	3.8	116
	1517	4.1	125		1700	3.3*	101*
	2328	-0.6	-18				
3 Sa	0755	3.5	107	18 Su	0042	0.0	0
	1042	3.4	104		1002	4.0	122
	1559	4.2	128				
4 Su	0023	-1.0	-30	19 M	0119	-0.1	-3
	0858	3.8	116		1037	4.1	125
	1208	3.6	110				
	1656	4.3	131				
5 M	0123	-1.2	-37	20 Tu	0158	0.0	0
	0947	4.0	122		1109	4.1	125
	1339	3.6	110				
	1805	4.2	128				
6 Tu	0222	-1.2	-37	21 W	0237	0.0	0
	1035	4.1	125		1134	4.1	125
	1503	3.4	104				
	1917	4.1	125				
7 W	0320	-1.1	-34	22 Th	0319	0.1	3
	1117	4.2	128		1200	4.1	125
	1614	3.1	94				
	2037	3.8	116				
8 Th	0417	-0.8	-24	23 F	0355	0.3	9
	1158	4.2	128		1221	4.0	122
	1727	2.6	79				
	2159	3.6	110				
9 F	0513	-0.4	-12	24 Sa	0430	0.5	15
	1235	4.2	128		1236	4.0	122
	1830	2.1	64		1909	2.6	79
	2322	3.3	101		2142	2.7	82
10 Sa	0605	0.2	5	25 Su	0502	0.9	27
	1310	4.2	128		1244	3.9	119
	1932	1.6	49		1917	2.2	67
					2319	2.5	76
11 Su	0049	3.1	94	26 M	0527	1.3	40
	0654	0.8	24		1248	3.9	119
	1342	4.2	128		1939	1.6	49
	2027	1.1	34				
12 M	0217	3.0	91	27 Tu	0058	2.5	76
	0742	1.5	46		0552	1.8	55
	1414	4.0	122		1253	4.0	122
	2119	0.7	21		2011	1.0	30
13 Tu	0346	3.0	91	28 W	0239	2.7	82
	0827	2.1	64		0621	2.3	70
	1437	3.9	119		1303	4.2	128
	2205	0.4	12		2046	0.3	9
14 W	0522	3.2	98	29 Th	0419	2.9	88
	0923	2.7	82		0643	2.8	85
	1449	3.7	113		1324	4.4	134
	2248	0.2	6		2130	-0.3	-9
15 Th	0652	3.4	104	30 F	1400	4.7	143
	1023	3.2	98		2217	-0.8	-24
	1453	3.6	110				
	2329	0.0	0				

DECEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Sa	1439	4.8	146	16 Su	0932	4.0	122
	2309	-1.1	-34		1152	3.9	119
					1338	4.0	122
2 Su	1532	4.8	146	17 M	0010	-0.1	-3
					1005	4.0	122
					1700	3.6*	110*
3 M	0005	-1.3	-40	18 Tu	0045	-0.1	-3
	0856	4.0	122		1031	4.1	125
	1129	3.8	116		1700	3.6*	110*
	1632	4.7	143				
4 Tu	0103	-1.3	-40	19 W	0123	0.0	0
	0928	4.1	125		1045	4.1	125
	1315	3.7	113		1700	3.6*	110*
	1744	4.4	134				
5 W	0200	-1.1	-34	20 Th	0158	0.1	3
	1005	4.3	131		1103	4.1	125
	1447	3.4	104				
	1905	4.1	125				
6 Th	0256	-0.8	-24	21 F	0230	0.3	9
	1042	4.4	134		1115	4.1	125
	1610	2.9	88				
	2031	3.7	113				
7 F	0344	-0.3	-9	22 Sa	0309	0.6	18
	1120	4.4	134		1122	4.0	122
	1726	2.3	70				
	2204	3.3	101				
8 Sa	0442	0.3	9	23 Su	0341	1.0	30
	1156	4.5	137		1130	4.0	122
	1827	1.6	49		1822	2.2	67
	2340	3.1	94		2204	2.5	76
9 Su	0532	1.0	30	24 M	0409	1.5	46
	1228	4.5	137		1134	4.0	122
	1923	1.0	30		1841	1.6	49
10 M	0114	3.0	91	25 Tu	0005	2.5	76
	0621	1.6	49		0434	2.0	61
	1258	4.4	134		1141	4.1	125
	2013	0.6	18		1909	1.0	30
11 Tu	0249	3.1	94	26 W	0149	2.6	79
	0713	2.3	70		0500	2.4	73
	1324	4.3	131		1153	4.3	131
	2101	0.2	6		1945	0.3	9
12 W	0418	3.3	101	27 Th	1218	4.6	140
	0759	2.4	88		2024	-0.3	-9
	1344	4.1	125				
	2143	0.0	0				
13 Th	0547	3.5	107	28 F	1244	4.9	149
	0852	3.3	101		2113	-0.8	-24
	1353	4.0	122				
	2222	-0.1	-3				
14 F	0710	3.7	113	29 Sa	1335	5.0	152
	0940	3.6	110		2201	-1.1	-34
	1357	3.9	119				
	2259	-0.1	-3				
15 Sa	0826	3.9	119	30 Su	1424	5.1	155
	1039	3.8	116		2254	-1.3	-40
	1348	3.9	119				
	2335	-0.1	-3				
				31 M	1521	5.0	152
					2348	-1.2	-37

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

SWEEPER COVE, ADAK ISLAND, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0146	0.1	3	16 Tu	0235	1.1	34
	1054	4.0	122		1013	3.9	119
					1721	2.0	61
					2143	2.5	76
2 Tu	0218	0.5	15	17 W	0300	1.7	52
	1031	3.9	119		1021	3.9	119
					1757	1.4	43
					2355	2.4	73
3 W	0237	1.1	34	18 Th	0315	2.2	67
	1021	4.0	122		1029	4.0	122
	1736	1.9	58		1831	0.9	27
	2157	2.3	70				
4 Th	0248	1.8	55	19 F	1033	4.1	125
	1025	4.3	131		1908	0.5	15
	1817	1.0	30				
5 F	1036	4.7	143	20 Sa	1041	4.3	131
	1859	0.2	6		1942	0.1	3
6 Sa	1054	5.0	152	21 Su	1053	4.5	137
	1942	-0.4	-12		2022	-0.1	-3
7 Su	1123	5.3	162	22 M	1111	4.7	143
	2031	-0.9	-27		2100	-0.3	-9
8 M	1158	5.4	165	23 Tu	1136	4.8	146
	2122	-1.1	-34		2139	-0.4	-12
9 Tu	1241	5.4	165	24 W	1205	4.9	149
	2215	-1.2	-37		2217	-0.5	-15
10 W	1323	5.2	158	25 Th	1237	4.8	146
	2305	-1.1	-34		2257	-0.4	-12
11 Th	1409	4.9	149	26 F	1312	4.7	143
	2354	-0.8	-24		2335	-0.3	-9
12 F	1457	4.4	134	27 Sa	1354	4.4	134
13 Sa	0039	-0.5	-15	28 Su	0011	0.0	0
	1016	4.0	122		0800	3.4*	104*
	1800	3.6*	110*		1457	3.9	119
14 Su	0122	0.0	0	29 M	0039	0.3	9
	1006	3.9	119		0924	3.5	107
					1343	3.1	94
					1636	3.2	98
15 M	0201	0.5	15	30 Tu	0111	0.8	24
	1007	3.9	119		0859	3.5	107
	1639	2.6	79		1509	2.4	73
	1933	2.7	82		1910	2.7	82
				31 W	0142	1.4	43
					0853	3.8	116
					1557	1.5	46
					2138	2.5	76

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0157	2.0	61	16 F	0907	3.7	113
	0903	4.1	125		1727	0.4	12
	1650	0.7	21				
2 F	0923	4.4	134	17 Sa	0918	3.9	119
	1739	0.0	0		1809	0.1	3
3 Sa	0951	4.8	146	18 Su	0939	4.1	125
	1827	-0.5	-15		1848	-0.1	-3
4 Su	1027	5.0	152	19 M	1001	4.3	131
	1920	-0.8	-24		1931	-0.2	-6
5 M	1106	5.1	155	20 Tu	1037	4.4	134
	2011	-1.0	-30		2014	-0.3	-9
6 Tu	1151	5.1	155	21 W	1114	4.5	137
	2105	-0.9	-27		2053	-0.3	-9
7 W	1235	4.9	149	22 Th	1153	4.4	134
	2155	-0.7	-21		2136	-0.2	-6
8 Th	1324	4.5	137	23 F	1239	4.2	128
	2246	-0.4	-12		2211	0.0	0
9 F	1417	4.1	125	24 Sa	1339	3.9	119
	2331	0.0	0		2250	0.4	12
10 Sa	0909	3.4	104	25 Su	1500	3.5	107
	1124	3.3	101		2322	0.8	24
	1522	3.6	110				
11 Su	0013	0.4	12	26 M	0655	2.9	88
	0846	3.3	101		1137	2.4	73
	1333	2.9	88		1651	3.0	91
	1658	3.1	94		2359	1.3	40
12 M	0056	0.9	27	27 Tu	0647	3.1	94
	0842	3.3	101		1310	1.7	52
	1443	2.3	70		1903	2.7	82
	1859	2.7	82				
13 Tu	0131	1.4	43	28 W	0031	1.9	58
	0844	3.3	101		0657	3.4	104
	1536	1.8	55		1412	0.9	27
	2057	2.6	79		2116	2.7	82
14 W	0206	1.9	58				
	0846	3.4	104				
	1618	1.3	40				
	2253	2.6	79				
15 Th	0224	2.4	73				
	0854	3.5	107				
	1653	0.8	24				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0103	2.4	73	16 F	0226	2.9	88
	0720	3.8	116		0651	3.3	101
	1512	0.2	6		1547	0.2	6
	2326	2.9	88		2300	3.0*	91*
2 F	0118	2.8	85	17 Sa	0716	3.4	104
	0751	4.1	125		1628	0.0	0
	1607	-0.4	-12				
3 Sa	0831	4.4	134	18 Su	0000	3.1*	94*
	1703	-0.8	-24		0750	3.6	110
					1711	-0.2	-6
4 Su	0917	4.5	137	19 M	0200	3.2*	98*
	1758	-0.9	-27		0830	3.7	113
					1751	-0.3	-9
5 M	1008	4.6	140	20 Tu	0912	3.8	116
	1852	-0.9	-27		1833	-0.3	-9
6 Tu	1059	4.5	137	21 W	0956	3.9	119
	1945	-0.7	-21		1915	-0.2	-6
7 W	1148	4.2	128	22 Th	1045	3.8	116
	2036	-0.4	-12		1954	0.0	0
8 Th	1250	3.9	119	23 F	1145	3.6	110
	2128	0.0	0		2033	0.4	12
9 F	0621	2.9	88	24 Sa	0453	2.6	79
	0824	2.8	85		0701	2.5	76
	1356	3.4	104		1300	3.3	101
	2214	0.5	15		2105	0.8	24
10 Sa	0622	2.9	88	25 Su	0416	2.6	79
	1024	2.6	79		0900	2.1	64
	1512	3.0	91		1436	2.9	88
	2259	1.0	30		2144	1.3	40
11 Su	0627	2.8	85	26 M	0411	2.7	82
	1152	2.2	67		1023	1.4	43
	1658	2.7	82		1647	2.7	82
	2341	1.5	46		2218	1.9	58
12 M	0631	2.8	85	27 Tu	0419	3.0	91
	1255	1.7	52		1136	0.7	21
	1859	2.6	79		1906	2.7	82
					2253	2.4	73
13 Tu	0027	1.9	58	28 W	0442	3.4	104
	0633	2.8	85		1238	0.0	0
	1348	1.3	40		2112	3.0	91
	2054	2.7	82		2318	2.9	88
14 W	0106	2.3	70	29 Th	0514	3.7	113
	0635	2.9	88		1340	-0.6	-18
	1430	0.8	24				
	2227	2.8	85				
15 Th	0154	2.7	82	30 F	0600	4.0	122
	0643	3.1	94		1439	-1.0	-30
	1505	0.5	15				
	2343	3.0	91				
				31 Sa	0649	4.1	125
					1534	-1.2	-37

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

SWEEPER COVE, ADAK ISLAND, ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 Su	0748	4.2	128	16 M	0536	3.5	107
	1630	-1.2	-37		1613	-0.5	-15
2 M	0138	3.4	104	17 Tu	0000	3.2*	98*
	0336	3.3	101		0652	3.5	107
	0849	4.1	125		1655	-0.4	-12
	1724	-1.0	-30				
3 Tu	0210	3.3	101	18 W	0000	2.9*	88*
	0454	3.1	94		0801	3.4	104
	0955	3.9	119		1730	-0.2	-6
	1817	-0.6	-18				
4 W	0237	3.1	94	19 Th	0251	3.1	94
	0608	2.9	88		0504	3.0	91
	1057	3.5	107		0907	3.2	98
	1906	-0.2	-6		1806	0.1	3
5 Th	0309	3.0	91	20 F	0225	2.9	88
	0725	2.6	79		0618	2.6	79
	1213	3.2	98		1030	3.0	91
	1953	0.4	12		1838	0.5	15
6 F	0329	2.9	88	21 Sa	0209	2.8	85
	0841	2.2	67		0721	2.1	64
	1333	2.8	85		1207	2.6	79
	2042	0.9	27		1903	1.1	34
7 Sa	0349	2.8	85	22 Su	0201	2.9	88
	0950	1.8	55		0827	1.4	43
	1514	2.5	76		1409	2.4	73
	2124	1.5	46		1927	1.7	52
8 Su	0357	2.8	85	23 M	0159	3.1	94
	1049	1.3	40		0926	0.7	21
	1721	2.4	73		1649	2.4	73
	2200	2.0	61		1939	2.3	70
9 M	0356	2.8	85	24 Tu	0211	3.5	107
	1141	0.9	27		1024	-0.1	-3
	1935	2.6	79				
	2221	2.5	76				
10 Tu	0342	2.9	88	25 W	0236	3.8	116
	1220	0.5	15		1124	-0.7	-21
	1900	2.6*	79*				
11 W	0320	3.0	91	26 Th	0312	4.1	125
	1258	0.2	6		1219	-1.3	-40
	2301	3.2	98				
12 Th	0103	3.1	94	27 F	0354	4.2	128
	0236	3.2	98		1315	-1.6	-49
	1333	0.0	0				
	2343	3.4	104				
13 F	0600	3.1*	94*	28 Sa	0454	4.2	128
	1412	-0.3	-9		1410	-1.6	-49
					2300	3.7*	113*
14 Sa	0031	3.5	107	29 Su	0602	4.1	125
	0800	3.1*	94*		1507	-1.5	-46
	1453	-0.4	-12				
15 Su	0112	3.5	107	30 M	0012	3.6	110
	0800	3.1*	94*		0312	3.5	107
	1533	-0.5	-15		0715	3.8	116
	2300	3.2*	98*		1558	-1.2	-37

MAY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 Tu	0035	3.5	107	16 W	0121	3.5	107
	0436	3.1	94		0800	3.1*	94*
	0830	3.5	107		1557	-0.3	-9
	1649	-0.7	-21				
2 W	0058	3.4	104	17 Th	0106	3.3	101
	0552	2.7	82		0900	2.8*	85*
	0946	3.1	94		1625	0.1	3
	1735	-0.2	-6				
3 Th	0122	3.3	101	18 F	0050	3.2	98
	0703	2.2	67		0641	2.4	73
	1112	2.6	79		0845	2.5	76
	1815	0.5	15		1653	0.5	15
4 F	0142	3.2	98	19 Sa	0035	3.2	98
	0807	1.6	49		0706	1.8	55
	1259	2.3	70		1102	2.1	64
	1854	1.1	34		1709	1.1	34
5 Sa	0156	3.2	98	20 Su	0028	3.3	101
	0906	1.1	34		0749	1.0	30
	1503	2.2	67		1341	1.9	58
	1912	1.8	55		1709	1.7	52
6 Su	0201	3.2	98	21 M	0031	3.6	110
	0951	0.7	21		0831	0.2	6
7 M	0156	3.2	98	22 Tu	0044	4.0	122
	1032	0.3	9		0924	-0.6	-18
8 Tu	0137	3.3	101	23 W	0105	4.4	134
	1109	-0.1	-3		1012	-1.2	-37
9 W	0118	3.5	107	24 Th	0141	4.6	140
	1144	-0.3	-9		1105	-1.7	-52
10 Th	0044	3.7	113	25 F	0223	4.7	143
	1218	-0.5	-15		1200	-1.9	-58
11 F	0044	3.8	116	26 Sa	0316	4.6	140
	1254	-0.7	-21		1254	-1.9	-58
					2200	3.8*	116*
12 Sa	0051	3.9	119	27 Su	0417	4.3	131
	1331	-0.8	-24		1348	-1.7	-52
					2333	3.8	116
13 Su	0112	3.9	119	28 M	0148	3.7	113
	1409	-0.8	-24		0530	3.9	119
					1439	-1.4	-43
					2331	3.7	113
14 M	0130	3.8	116	29 Tu	0342	3.3	101
	1448	-0.7	-21		0643	3.4	104
					1525	-0.8	-24
					2345	3.6	110
15 Tu	0127	3.7	113	30 W	0508	2.7	82
	1524	-0.6	-18		0818	2.9	88
					1609	-0.2	-6
				31 Th	0000	3.6	110
					0624	2.0	61
					1001	2.4	73
					1647	0.5	15

JUNE

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 F	0019	3.6	110	16 Sa	0627	1.6	49
	0713	1.4	43		1001	1.9	58
	1158	2.0	61		1539	1.2	37
	1719	1.1	34		2314	3.6	110
2 Sa	0031	3.5	107	17 Su	0659	0.8	24
	0805	0.8	24		2319	3.9	119
	1417	2.0	61				
	1724	1.8	55				
3 Su	0038	3.5	107	18 M	0734	0.0	0
	0846	0.3	9		2333	4.3	131
4 M	0037	3.6	110	19 Tu	0819	-0.7	-21
	0925	-0.1	-3		2359	4.7	143
5 Tu	0031	3.7	113	20 W	0910	-1.3	-40
	1001	-0.4	-12				
6 W	0022	3.9	119	21 Th	0034	4.9	149
	1039	-0.6	-18		1000	-1.7	-52
7 Th	0019	4.0	122	22 F	0117	5.0	152
	1111	-0.8	-24		1052	-1.9	-58
8 F	0034	4.1	125	23 Sa	0205	4.9	149
	1147	-0.9	-27		1144	-1.8	-55
9 Sa	0055	4.2	128	24 Su	0259	4.6	140
	1224	-0.9	-27		1236	-1.6	-49
					2200	3.7*	113*
10 Su	0115	4.2	128	25 M	0405	4.1	125
	1259	-0.9	-27		1323	-1.3	-40
					2241	3.6	110
11 M	0133	4.1	125	26 Tu	0209	3.4	104
	1335	-0.8	-24		0518	3.5	107
					1412	-0.7	-21
					2235	3.5	107
12 Tu	0109	3.9	119	27 W	0354	2.8	85
	1410	-0.7	-21		0651	2.9	88
					1454	-0.2	-6
					2247	3.6	110
13 W	0019	3.7	113	28 Th	0503	2.1	64
	1439	-0.4	-12		0840	2.4	73
	2355	3.5	107		1530	0.5	15
					2302	3.6	110
14 Th	1506	0.1	3	29 F	0602	1.4	43
	2335	3.4	104		1044	2.0	61
					1602	1.2	37
					2315	3.6	110
15 F	1526	0.6	18	30 Sa	0650	0.8	24
	2320	3.4	104		1256	2.0	61
					1607	1.8	55
					2326	3.7	113

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

SWEEPER COVE, ADAK ISLAND, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0733	0.3	9	16 M	0625	-0.1	-3
	2331	3.8	116		2227	4.4	134
2 M	0811	-0.1	-3	17 Tu	0712	-0.7	-21
	2335	3.9	119		2256	4.7	143
3 Tu	0850	-0.4	-12	18 W	0800	-1.2	-37
	2339	4.0	122		2335	4.9	149
4 W	0926	-0.6	-18	19 Th	0853	-1.5	-46
	2351	4.2	128				
5 Th	1004	-0.8	-24	20 F	0021	5.0	152
					0944	-1.6	-49
6 F	0009	4.3	131	21 Sa	0106	4.9	149
	1042	-0.9	-27		1038	-1.5	-46
7 Sa	0036	4.3	131	22 Su	0205	4.6	140
	1121	-0.9	-27		1127	-1.2	-37
8 Su	0101	4.3	131	23 M	0304	4.1	125
	1156	-0.8	-24		1213	-0.8	-24
					2145	3.3	101
					2349	3.2	98
9 M	0130	4.1	125	24 Tu	0417	3.5	107
	1229	-0.7	-21		1302	-0.4	-12
					2125	3.2	98
10 Tu	0151	3.9	119	25 W	0209	2.7	82
	1301	-0.5	-15		0553	3.0	91
					1345	0.2	6
					2130	3.3	101
11 W	0001	3.5	107	26 Th	0330	2.1	64
	1333	-0.2	-6		0743	2.5	76
	2241	3.3	101		1425	0.8	24
					2139	3.3	101
12 Th	0600	2.8*	85*	27 F	0430	1.4	43
	1358	0.3	9		0939	2.2	67
	2213	3.3	101		1457	1.4	43
					2153	3.4	104
13 F	1423	0.8	24	28 Sa	0512	0.9	27
	2202	3.4	104		1135	2.2	67
					1522	1.9	58
					2206	3.5	107
14 Sa	0506	1.5	46	29 Su	0558	0.4	12
	0935	1.9	58		2217	3.6	110
	1432	1.4	43				
	2201	3.6	110				
15 Su	0546	0.7	21	30 M	0640	0.0	0
	2209	4.0	122		2228	3.8	116
				31 Tu	0721	-0.3	-9
					2240	3.9	119

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0802	-0.4	-12	16 Th	0737	-1.2	-37
	2303	4.0	122		2323	4.7	143
2 Th	0844	-0.6	-18	17 F	0828	-1.1	-34
	2330	4.2	128				
3 F	0926	-0.6	-18	18 Sa	0019	4.5	137
	2359	4.2	128		0924	-0.9	-27
4 Sa	1004	-0.6	-18	19 Su	0115	4.2	128
					1016	-0.6	-18
5 Su	0031	4.1	125	20 M	0221	3.8	116
	1043	-0.5	-15		1103	-0.2	-6
					1953	2.8	85
					2221	2.7	82
6 M	0109	4.0	122	21 Tu	0336	3.3	101
	1118	-0.3	-9		1150	0.3	9
					1940	2.8	85
7 Tu	0151	3.7	113	22 W	0024	2.3	70
	1157	-0.1	-3		0519	2.9	88
	2000	2.9*	88*		1239	0.9	27
					1947	2.9	88
8 W	0257	3.3	101	23 Th	0145	1.8	55
	1229	0.3	9		0712	2.6	79
	2056	2.9	88		1321	1.4	43
					1958	2.9	88
9 Th	0109	2.6	79	24 F	0245	1.2	37
	0443	2.8	85		0901	2.5	76
	1255	0.8	24		1403	1.9	58
	2028	2.9	88		2009	3.0	91
10 F	0225	1.9	58	25 Sa	0331	0.8	24
	0701	2.4	73		1037	2.6	79
	1323	1.3	40		1445	2.3	70
	2021	3.1	94		2021	3.2	98
11 Sa	0321	1.2	37	26 Su	0413	0.4	12
	0923	2.2	67		1207	2.8	85
	1341	1.8	55		1517	2.6	79
	2027	3.5	107		2036	3.3	101
12 Su	0410	0.5	15	27 M	0458	0.1	3
	2045	3.8	116		2057	3.5	107
13 M	0501	-0.2	-6	28 Tu	0540	-0.1	-3
	2115	4.2	128		2119	3.6	110
14 Tu	0551	-0.7	-21	29 W	0624	-0.2	-6
	2149	4.5	137		2151	3.8	116
15 W	0643	-1.0	-30	30 Th	0709	-0.[illegible]	-9
	2235	4.7	143		2227	3.[illegible]	119
				31 F	0754	-0.3	-9
					2305	3.9	119

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0836	-0.2	-6	16 Su	0034	3.7	113
	2343	3.8	116		0849	0.1	3
					1651	2.8	85
					2021	2.6	79
2 Su	0915	0.0	0	17 M	0150	3.3	101
					0940	0.6	18
					1706	2.7	82
					2157	2.2	67
3 M	0035	3.7	113	18 Tu	0326	2.9	88
	0954	0.2	6		1026	1.2	37
					1717	2.7	82
					2320	1.7	52
4 Tu	0135	3.4	104	19 W	0512	2.7	82
	1030	0.6	18		1121	1.7	52
	1843	2.6	79		1727	2.8	85
	2125	2.5	76				
5 W	0304	3.0	91	20 Th	0021	1.3	40
	1105	1.0	30		0711	2.7	82
	1809	2.6	79		1210	2.2	67
	2324	2.0	61		1736	2.8	85
6 Th	0458	2.7	82	21 F	0107	0.8	24
	1137	1.5	46		0854	2.9	88
	1801	2.8	85		1312	2.6	79
					1740	2.9	88
7 F	0037	1.3	40	22 Sa	0153	0.5	15
	0711	2.6	79		1024	3.1	94
	1208	2.0	61		1415	2.9	88
	1809	3.1	94		1748	3.1	94
8 Sa	0139	0.6	18	23 Su	0235	0.2	6
	0919	2.7	82		1123	3.3	101
	1233	2.5	76		1507	3.1	94
	1828	3.4	104		1806	3.2	98
9 Su	0234	0.0	0	24 M	0317	0.0	0
	1900	3.8	116		1221	3.4	104
					1542	3.2	98
					1824	3.3	101
10 M	0330	-0.5	-15	25 Tu	0359	-0.1	-3
	1939	4.1	125		1321	3.4	104
					1607	3.3	101
					1903	3.5	107
11 Tu	0423	-0.9	-27	26 W	0441	-0.2	-6
	2035	4.3	131		1200	3.1*	94*
					1956	3.5	107
12 W	0518	-1.0	-30	27 Th	0526	-0.2	-6
	2127	4.3	131		1300	3.1*	94*
					2048	3.6	110
13 Th	0611	-1.0	-30	28 F	0606	-0.1	-3
	2226	4.2	128		1500	3.1*	94*
					2133	3.6	110
14 F	0707	-0.7	-21	29 Sa	0648	0.1	3
	2325	4.0	122		1500	2.9*	88*
					2229	3.4	104
15 Sa	0759	-0.4	-12	30 Su	0727	0.4	12
					1611	2.8	85
					1812	2.7	82
					2335	3.2	98

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height		Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 M	0759	0.8	24	16 Tu	0319	2.6	79	1 Th	1330	3.9	119	16 F	1240	4.1	125
	1545	2.7	82		0837	1.9	58		2207	0.1	3		2326	-0.2	-6
	1945	2.4	73		1502	3.2	98								
					2225	1.1	34								
2 Tu	0057	2.9	88	17 W	0539	2.7	82	2 F	1348	4.3	131	17 Sa	1209	4.3	131
	0835	1.2	37		0913	2.5	76		2257	-0.5	-15				
	1529	2.7	82		1503	3.2	98								
	2100	1.9	58		2318	0.7	21								
3 W	0248	2.7	82	18 Th	0600	2.8*	85*	3 Sa	1423	4.6	140	18 Su	0003	-0.3	-9
	0903	1.7	52		1451	3.3	101		2349	-1.0	-30		1200	4.4	134
	1521	2.9	88												
	2213	1.3	40												
4 Th	0509	2.6	79	19 F	0000	0.4	12	4 Su	1503	4.7	143	19 M	0036	-0.4	-12
	0924	2.3	70		0700	3.1*	94*						1212	4.5	137
	1525	3.2	98		1418	3.4	104								
	2312	0.6	18												
5 F	1540	3.5	107	20 Sa	0035	0.1	3	5 M	0044	-1.4	-43	20 Tu	0113	-0.4	-12
					1051	3.7	113		1559	4.7	143		1227	4.4	134
					1700	3.3*	101*								
6 Sa	0014	0.0	0	21 Su	0110	-0.1	-3	6 Tu	0137	-1.5	-46	21 W	0150	-0.4	-12
	1612	3.8	116		1130	3.9	119		1100	4.2*	128*		1242	4.4	134
									1708	4.6	140				
7 Su	0107	-0.6	-18	22 M	0149	-0.2	-6	7 W	0230	-1.3	-40	22 Th	0226	-0.3	-9
	1657	4.1	125		1155	4.0	122		1203	4.1	125		1239	4.2	128
					1800	3.5*	107*		1437	4.0	122				
									1821	4.3	131				
8 M	0203	-1.0	-30	23 Tu	0228	-0.3	-9	8 Th	0322	-1.0	-30	23 F	0300	-0.1	-3
	1100	3.7*	113*		1229	4.0	122		1206	4.0	122		1237	4.1	125
	1751	4.2	128						1612	3.6	110				
									1940	3.9	119				
9 Tu	0258	-1.2	-37	24 W	0307	-0.3	-9	9 F	0412	-0.5	-15	24 Sa	0332	0.2	6
	1857	4.3	131		1301	3.9	119		1221	3.9	119		1232	3.9	119
									1729	3.1	94				
									2106	3.4	104				
10 W	0353	-1.1	-34	25 Th	0349	-0.2	-6	10 Sa	0454	0.1	3	25 Su	0357	0.6	18
	1309	3.7	113		1330	3.8	116		1243	3.8	116		1224	3.8	116
	1513	3.6	110		2000	3.5*	107*		1845	2.5	76				
	2002	4.2	128						2242	2.9	88				
11 Th	0446	-0.9	-27	26 F	0425	0.0	0	11 Su	0535	0.8	24	26 M	0412	1.1	34
	1330	3.5	107		1347	3.6	110		1301	3.8	116		1212	3.8	116
	1630	3.4	104		2200	3.1*	94*		1943	1.8	55		1924	2.1	64
	2115	3.9	119										2245	2.3	70
12 F	0536	-0.5	-15	27 Sa	0503	0.2	6	12 M	0042	2.6	79	27 Tu	0427	1.7	52
	1352	3.4	104		1354	3.5	107		0612	1.5	46		1204	3.9	119
	1751	3.0	91		1824	3.1	94		1316	3.8	116		1946	1.4	43
	2227	3.6	110		2027	3.2	98		2043	1.2	37				
13 Sa	0625	0.0	0	28 Su	0535	0.6	18	13 Tu	0257	2.5	76	28 W	1202	4.2	128
	1417	3.3	101		1348	3.3	101		0632	2.2	67		2025	0.6	18
	1901	2.6	79		1900	2.8	85		1326	3.8	116				
	2347	3.2	98		2203	2.9	88		2128	0.7	21				
14 Su	0713	0.6	18	29 M	0600	1.0	30	14 W	1325	3.9	119	29 Th	1213	4.6	140
	1436	3.2	98		1335	3.3	101		2213	0.3	9		2103	-0.1	-3
	2021	2.1	64		1942	2.2	67								
15 M	0123	2.8	85	30 Tu	0000	2.6	79	15 Th	1310	4.0	122	30 F	1231	5.0	152
	0757	1.2	37		0615	1.6	49		2252	0.0	0		2149	-0.8	-24
	1451	3.2	98		1327	3.3	101								
	2127	1.6	49		2027	1.6	49								
				31 W	0227	2.4	73								
					0624	2.1	64								
					1322	3.6	110								
					2116	0.8	24								

NOVEMBER

Day	Time	Height		Day	Time	Height		Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 Th	1330	3.9	119	16 F	1240	4.1	125	1 Sa	1303	5.3	162	16 Su	1213	4.7	143
	2207	0.1	3		2326	-0.2	-6		2241	-1.2	-37		2334	-0.5	-15
2 F	1348	4.3	131	17 Sa	1209	4.3	131	2 Su	1346	5.4	165	17 M	1227	4.7	143
	2257	-0.5	-15						2333	-1.5	-46				
3 Sa	1423	4.6	140	18 Su	0003	-0.3	-9	3 M	1438	5.3	162	18 Tu	0010	-0.5	-15
	2349	-1.0	-30		1200	4.4	134						1241	4.7	143
4 Su	1503	4.7	143	19 M	0036	-0.4	-12	4 Tu	0026	-1.6	-49	19 W	0043	-0.4	-12
					1212	4.5	137		1534	5.1	155		1248	4.6	140
5 M	0044	-1.4	-43	20 Tu	0113	-0.4	-12	5 W	0117	-1.4	-43	20 Th	0118	-0.3	-9
	1559	4.7	143		1227	4.4	134		1000	4.2*	128*		1221	4.4	134
									1644	4.6	140				
6 Tu	0137	-1.5	-46	21 W	0150	-0.4	-12	6 Th	0205	-1.0	-30	21 F	0150	-0.1	-3
	1100	4.2*	128*		1242	4.4	134		1110	4.2	128		1154	4.2	128
	1708	4.6	140						1502	3.9	119				
									1806	4.0	122				
7 W	0230	-1.3	-40	22 Th	0226	-0.3	-9	7 F	0255	-0.5	-15	22 Sa	0215	0.2	6
	1203	4.1	125		1239	4.2	128		1115	4.2	128		1131	4.1	125
	1437	4.0	122						1635	3.2	98				
	1821	4.3	131						1945	3.4	104				
8 Th	0322	-1.0	-30	23 F	0300	-0.1	-3	8 Sa	0337	0.2	6	23 Su	0240	0.7	21
	1206	4.0	122		1237	4.1	125		1129	4.2	128		1114	4.0	122
	1612	3.6	110						1754	2.5	76				
	1940	3.9	119						2135	2.9	88				
9 F	0412	-0.5	-15	24 Sa	0332	0.2	6	9 Su	0417	0.9	27	24 M	0255	1.2	37
	1221	3.9	119		1232	3.9	119		1145	4.2	128		1100	4.0	122
	1729	3.1	94						1846	1.8	55		1841	2.1	64
	2106	3.4	104						2338	2.5	76		2151	2.2	67
10 Sa	0454	0.1	3	25 Su	0357	0.6	18	10 M	0446	1.6	49	25 Tu	0259	1.7	52
	1243	3.8	116		1224	3.8	116		1200	4.2	128		1054	4.2	128
	1845	2.5	76						1940	1.1	34		1849	1.3	40
	2242	2.9	88												
11 Su	0535	0.8	24	26 M	0412	1.1	34	11 Tu	0201	2.4	73	26 W	1055	4.5	137
	1301	3.8	116		1212	3.8	116		0454	2.3	70		1918	0.5	15
	1943	1.8	55		1924	2.1	64		1213	4.3	131				
					2245	2.3	70		2024	0.6	18				
12 M	0042	2.6	79	27 Tu	0427	1.7	52	12 W	1217	4.3	131	27 Th	1106	4.9	149
	0612	1.5	46		1204	3.9	119		2105	0.1	3		2000	-0.2	-6
	1316	3.8	116		1946	1.4	43								
	2043	1.2	37												
13 Tu	0257	2.5	76	28 W	1202	4.2	128	13 Th	1218	4.4	134	28 F	1128	5.3	162
	0632	2.2	67		2025	0.6	18		2147	-0.1	-3		2042	-0.8	-24
	1326	3.8	116												
	2128	0.7	21												
14 W	1325	3.9	119	29 Th	1213	4.6	140	14 F	1212	4.5	137	29 Sa	1203	5.5	168
	2213	0.3	9		2103	-0.1	-3		2223	-0.3	-9		2133	-1.2	-37
15 Th	1310	4.0	122	30 F	1231	5.0	152	15 Sa	1202	4.6	140	30 Su	1246	5.7	174
	2252	0.0	0		2149	-0.8	-24		2258	-0.4	-12		2223	-1.4	-43

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	1303	5.3	162	16 Su	1213	4.7	143
	2241	-1.2	-37		2334	-0.5	-15
2 Su	1346	5.4	165	17 M	1227	4.7	143
	2333	-1.5	-46				
3 M	1438	5.3	162	18 Tu	0010	-0.5	-15
					1241	4.7	143
4 Tu	0026	-1.6	-49	19 W	0043	-0.4	-12
	1534	5.1	155		1248	4.6	140
5 W	0117	-1.4	-43	20 Th	0118	-0.3	-9
	1000	4.2*	128*		1221	4.4	134
	1644	4.6	140				
6 Th	0205	-1.0	-30	21 F	0150	-0.1	-3
	1110	4.2	128		1154	4.2	128
	1502	3.9	119				
	1806	4.0	122				
7 F	0255	-0.5	-15	22 Sa	0215	0.2	6
	1115	4.2	128		1131	4.1	125
	1635	3.2	98				
	1945	3.4	104				
8 Sa	0337	0.2	6	23 Su	0240	0.7	21
	1129	4.2	128		1114	4.0	122
	1754	2.5	76				
	2135	2.9	88				
9 Su	0417	0.9	27	24 M	0255	1.2	37
	1145	4.2	128		1100	4.0	122
	1846	1.8	55		1841	2.1	64
	2338	2.5	76		2151	2.2	67
10 M	0446	1.6	49	25 Tu	0259	1.7	52
	1200	4.2	128		1054	4.2	128
	1940	1.1	34		1849	1.3	40
11 Tu	0201	2.4	73	26 W	1055	4.5	137
	0454	2.3	70		1918	0.5	15
	1213	4.3	131				
	2024	0.6	18				
12 W	1217	4.3	131	27 Th	1106	4.9	149
	2105	0.1	3		2000	-0.2	-6
13 Th	1218	4.4	134	28 F	1128	5.3	162
	2147	-0.1	-3		2042	-0.8	-24
14 F	1212	4.5	137	29 Sa	1203	5.5	168
	2223	-0.3	-9		2133	-1.2	-37
15 Sa	1202	4.6	140	30 Su	1246	5.7	174
	2258	-0.4	-12		2223	-1.4	-43
				31 M	1337	5.6	171
					2316	-1.4	-43

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

MASSACRE BAY, ATTU ISLAND, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0217	0.3	9	16	0255	1.1	34
M	1022	3.8	116	Tu	1005	3.9	119
	1603	2.9	88		1653	1.7	52
	1911	3.1	94		2200	2.6	79
2	0246	0.7	21	17	0323	1.6	49
Tu	1020	3.9	119	W	1022	3.9	119
	1642	2.3	70		1739	1.3	40
	2054	2.7	82		2333	2.5	76
3	0311	1.2	37	18	0345	2.0	61
W	1024	4.0	122	Th	1037	3.9	119
	1728	1.6	49		1821	0.9	27
	2241	2.5	76				
4	0329	1.8	55	19	0130	2.5	76
Th	1035	4.2	128	F	0340	2.4	73
	1814	0.9	27		1052	4.0	122
					1905	0.6	18
5	0057	2.4	73	20	1110	4.1	125
F	0333	2.3	70	Sa	1951	0.3	9
	1053	4.5	137				
	1906	0.3	9				
6	1119	4.7	143	21	1128	4.1	125
Sa	2000	-0.2	-6	Su	2040	0.1	3
7	1154	4.9	149	22	1157	4.2	128
Su	2056	-0.6	-18	M	2129	-0.1	-3
8	1237	4.9	149	23	1223	4.2	128
M	2149	-0.8	-24	Tu	2213	-0.2	-6
9	1325	4.8	146	24	1259	4.1	125
Tu	2244	-0.9	-27	W	2257	-0.3	-9
10	1423	4.6	140	25	1341	4.0	122
W	2336	-0.8	-24	Th	2336	-0.3	-9
11	0900	3.8*	116*	26	0800	3.5*	107*
Th	1529	4.3	131	F	1436	3.9	119
12	0025	-0.6	-18	27	0015	-0.2	-6
F	0906	3.8	116	Sa	0929	3.5	107
	1237	3.5	107		1218	3.4	104
	1639	3.9	119		1556	3.6	110
13	0109	-0.3	-9	28	0050	0.0	0
Sa	0917	3.8	116	Su	0903	3.4	104
	1400	3.1	94		1331	3.0	91
	1754	3.5	107		1719	3.3	101
14	0148	0.1	3	29	0119	0.3	9
Su	0933	3.8	116	M	0856	3.4	104
	1509	2.7	82		1421	2.4	73
	1913	3.1	94		1851	3.0	91
15	0226	0.6	18	30	0151	0.8	24
M	0951	3.9	119	Tu	0855	3.5	107
	1601	2.2	67		1511	1.7	52
	2036	2.8	85		2024	2.7	82
				31	0219	1.3	40
				W	0902	3.7	113
					1557	1.1	34
					2155	2.6	79

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0241	1.8	55	16	0316	2.2	67
Th	0918	3.9	119	F	0928	3.4	104
	1646	0.5	15		1725	0.3	9
	2335	2.5	76				
2	0259	2.2	67	17	0947	3.5	107
F	0940	4.2	128	Sa	1809	0.1	3
	1741	0.0	0				
3	1009	4.4	134	18	1014	3.6	110
Sa	1837	-0.4	-12	Su	1859	0.0	0
4	1050	4.5	137	19	1040	3.7	113
Su	1936	-0.6	-18	M	1950	-0.1	-3
5	1135	4.5	137	20	1112	3.7	113
M	2034	-0.7	-21	Tu	2042	-0.2	-6
6	1227	4.4	134	21	1154	3.6	110
Tu	2134	-0.7	-21	W	2132	-0.2	-6
7	1329	4.1	125	22	1250	3.5	107
W	2231	-0.6	-18	Th	2218	-0.2	-6
8	1439	3.8	116	23	0700	2.8*	85*
Th	2323	-0.4	-12	F	1359	3.3	101
					2301	-0.1	-3
9	0742	3.2	98	24	0730	2.7	82
F	1115	2.9	88	Sa	1037	2.6	79
	1554	3.5	107		1532	3.1	94
					2339	0.2	6
10	0008	-0.1	-3	25	0710	2.7	82
Sa	0757	3.2	98	Su	1156	2.1	64
	1244	2.5	76		1705	2.9	88
	1720	3.1	94				
11	0051	0.2	6	26	0018	0.5	15
Su	0812	3.2	98	M	0709	2.7	82
	1347	2.1	64		1251	1.5	46
	1839	2.9	88		1832	2.7	82
12	0130	0.6	18	27	0051	1.0	30
M	0828	3.3	101	Tu	0714	2.9	88
	1433	1.6	49		1340	0.8	24
	1955	2.7	82		1956	2.6	79
13	0205	1.1	34	28	0122	1.4	43
Tu	0844	3.3	101	W	0726	3.2	98
	1518	1.2	37		1429	0.2	6
	2107	2.6	79		2115	2.6	79
14	0237	1.5	46				
W	0858	3.3	101				
	1600	0.8	24				
	2221	2.5	76				
15	0302	1.8	55				
Th	0913	3.4	104				
	1639	0.6	18				
	2349	2.4	73				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0154	1.8	55	16	0242	2.1	64
Th	0748	3.4	104	F	0757	2.8	85
	1518	-0.3	-9		1545	-0.2	-6
	2234	2.6	79		2344	2.5	76
2	0219	2.1	64	17	0308	2.3	70
F	0820	3.7	113	Sa	0815	2.9	88
	1614	-0.6	-18		1627	-0.3	-9
	2357	2.5	76				
3	0244	2.4	73	18	0103	2.4	73
Sa	0855	3.9	119	Su	0306	2.3	70
	1706	-0.8	-24		0844	3.0	91
					1711	-0.3	-9
4	0940	3.9	119	19	0909	3.1	94
Su	1805	-0.9	-27	M	1801	-0.3	-9
5	1030	3.9	119	20	0951	3.1	94
M	1905	-0.8	-24	Tu	1851	-0.3	-9
6	1127	3.7	113	21	1033	3.0	91
Tu	2007	-0.6	-18	W	1943	-0.2	-6
7	1235	3.4	104	22	0500	2.4*	73*
W	2109	-0.4	-12	Th	1139	2.9	88
					2030	-0.1	-3
8	0532	2.6	79	23	0521	2.3	70
Th	0832	2.4	73	F	0742	2.2	67
	1354	3.1	94		1305	2.7	82
	2205	-0.1	-3		2122	0.2	6
9	0550	2.6	79	24	0501	2.2	67
F	1017	2.1	64	Sa	0927	1.8	55
	1524	2.8	85		1448	2.5	76
	2257	0.2	6		2212	0.5	15
10	0612	2.6	79	25	0456	2.2	67
Sa	1230	1.7	52	Su	1034	1.2	37
	1653	2.6	79		1632	2.4	73
	2346	0.5	15		2254	0.9	27
11	0630	2.7	82	26	0501	2.4	73
Su	1230	1.2	37	M	1127	0.6	18
	1816	2.5	76		1808	2.5	76
					2337	1.4	43
12	0031	0.9	27	27	0515	2.6	79
M	0651	2.7	82	Tu	1216	-0.1	-3
	1312	0.8	24		1929	2.6	79
	1931	2.5	76				
13	0113	1.2	37	28	0017	1.8	55
Tu	0709	2.7	82	W	0538	2.9	88
	1354	0.5	15		1308	-0.6	-18
	2036	2.5	76		2041	2.7	82
14	0149	1.6	49	29	0053	2.1	64
W	0724	2.7	82	Th	0606	3.2	98
	1431	0.2	6		1357	-1.1	-34
	2139	2.5	76		2153	2.7	82
15	0224	1.9	58	30	0131	2.3	70
n	0739	2.8	85	F	0645	3.4	104
	1506	0.0	0		1449	-1.3	-40
	2238	2.5	76		2251	2.7	82
				31	0207	2.4	73
				Sa	0728	3.5	107
					1541	-1.4	-43
					2355	2.6	79

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

MASSACRE BAY, ATTU ISLAND, ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0252	2.4	73	16 M	0044	2.6	79
	0821	3.5	107		0321	2.5	76
	1637	-1.2	-37		0724	2.8	85
					1621	-0.6	-18
2 M	0051	2.5	76	17 Tu	0000	2.4*	73*
	0344	2.4	73		0806	2.8	85
	0916	3.4	104		1703	-0.5	-15
	1733	-1.0	-30				
3 Tu	0142	2.5	76	18 W	0214	2.5	76
	0456	2.3	70		0436	2.4	73
	1018	3.1	94		0859	2.7	82
	1829	-0.7	-21		1746	-0.3	-9
4 W	0228	2.4	73	19 Th	0230	2.4	73
	0625	2.1	64		0600	2.2	67
	1131	2.8	85		1004	2.5	76
	1923	-0.3	-9		1828	0.0	0
5 Th	0307	2.4	73	20 F	0230	2.3	70
	0800	1.8	55		0724	1.9	58
	1300	2.4	73		1145	2.2	67
	2027	0.2	6		1917	0.4	12
6 F	0339	2.4	73	21 Sa	0233	2.3	70
	0924	1.4	43		0831	1.3	40
	1447	2.2	67		1348	2.0	61
	2122	0.6	18		2006	0.9	27
7 Sa	0406	2.5	76	22 Su	0237	2.4	73
	1030	0.9	27		0924	0.7	21
	1628	2.2	67		1553	2.0	61
	2221	1.0	30		2049	1.4	43
8 Su	0435	2.5	76	23 M	0249	2.6	79
	1119	0.5	15		1016	0.0	0
	1755	2.2	67		1743	2.3	70
	2317	1.4	43		2141	1.9	58
9 M	0456	2.5	76	24 Tu	0310	2.8	85
	1201	0.1	3		1105	-0.6	-18
	1914	2.4	73		1909	2.6	79
					2233	2.3	70
10 Tu	0009	1.7	52	25 W	0339	3.1	94
	0514	2.5	76		1154	-1.2	-37
	1242	-0.2	-6		2021	2.8	85
	2016	2.6	79		2321	2.6	79
11 W	0102	1.9	58	26 Th	0418	3.4	104
	0532	2.5	76		1245	-1.6	-49
	1314	-0.4	-12		2120	3.0	91
	2112	2.7	82				
12 Th	0145	2.2	67	27 F	0010	2.8	85
	0547	2.5	76		0505	3.5	107
	1350	-0.5	-15		1334	-1.7	-52
	2201	2.7	82		2209	3.0	91
13 F	0219	2.3	70	28 Sa	0109	2.8	85
	0605	2.6	79		0557	3.6	110
	1425	-0.6	-18		1427	-1.7	-52
	2300	2.7	82		2254	3.0	91
14 Sa	0245	2.5	76	29 Su	0205	2.7	82
	0627	2.7	82		0653	3.5	107
	1501	-0.7	-21		1518	-1.5	-46
	2351	2.7	82		2332	2.9	88
15 Su	0303	2.5	76	30 M	0312	2.5	76
	0652	2.8	85		0755	3.2	98
	1542	-0.7	-21		1608	-1.2	-37

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Tu	0010	2.8	85	16 W	0033	2.9	88
	0425	2.3	70		0456	2.6	79
	0901	2.9	88		0700	2.7	82
	1658	-0.7	-21		1615	-0.3	-9
2 W	0044	2.8	85	17 Th	0041	2.8	85
	0550	1.9	58		0549	2.3	70
	1016	2.5	76		0833	2.4	73
	1746	-0.2	-6		1650	0.1	3
3 Th	0115	2.8	85	18 F	0042	2.8	85
	0711	1.5	46		0645	1.8	55
	1156	2.1	64		1019	2.0	61
	1835	0.4	12		1719	0.5	15
4 F	0146	2.8	85	19 Sa	0044	2.8	85
	0823	1.0	30		0731	1.2	37
	1347	1.9	58		1236	1.8	55
	1925	0.9	27		1751	1.1	34
5 Sa	0215	2.8	85	20 Su	0049	2.9	88
	0921	0.5	15		0819	0.5	15
	1546	1.9	58		1501	1.9	58
	2016	1.4	43		1819	1.7	52
6 Su	0237	2.8	85	21 M	0103	3.2	98
	1014	0.1	3		0905	-0.2	-6
	1734	2.2	67				
	2115	1.9	58				
7 M	0300	2.8	85	22 Tu	0126	3.4	104
	1053	-0.2	-6		0954	-0.8	-24
	1857	2.5	76				
	2225	2.3	70				
8 Tu	0319	2.8	85	23 W	0157	3.7	113
	1132	-0.5	-15		1046	-1.3	-40
	2003	2.7	82				
	2340	2.5	76				
9 W	0330	2.8	85	24 Th	0239	3.9	119
	1207	-0.7	-21		1135	-1.7	-52
	2055	2.9	88				
10 Th	0039	2.7	82	25 F	0330	3.9	119
	0345	2.8	85		1227	-1.8	-55
	1242	-0.8	-24				
	2144	3.0	91				
11 F	0142	2.8	85	26 Sa	0429	3.9	119
	0401	2.9	88		1318	-1.8	-55
	1318	-0.9	-27		2209	3.2	98
	2226	3.1	94				
12 Sa	0600	2.8*	85*	27 Su	0051	3.1	94
	1353	-0.9	-27		0531	3.7	113
	2315	3.1	94		1406	-1.6	-49
					2235	3.2	98
13 Su	0700	2.7*	82*	28 M	0212	2.9	88
	1429	-0.8	-24		0637	3.4	104
	2349	3.1	94		1454	-1.2	-37
					2257	3.2	98
14 M	0800	2.6*	79*	29 Tu	0333	2.5	76
	1504	-0.8	-24		0746	3.0	91
					1537	-0.7	-21
					2325	3.2	98
15 Tu	0015	3.0	91	30 W	0454	2.0	61
	0409	2.7	82		0905	2.6	79
	0611	2.8	85		1619	-0.2	-6
	1538	-0.6	-18		2350	3.2	98
				31 Th	0603	1.5	46
					1035	2.2	67
					1701	0.4	12

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 F	0015	3.3	101	16 Sa	0621	1.2	37
	0709	1.0	30		1115	1.8	55
	1225	1.9	58		1616	1.2	37
	1733	1.1	34		2325	3.4	104
2 Sa	0039	3.3	101	17 Su	0707	0.6	18
	0807	0.5	15		1348	1.8	55
	1434	1.9	58		1621	1.7	52
	1812	1.6	49		2340	3.6	110
3 Su	0101	3.3	101	18 M	0753	-0.1	-3
	0857	0.1	3				
4 M	0119	3.3	101	19 Tu	0002	3.9	119
	0939	-0.2	-6		0843	-0.7	-21
5 Tu	0137	3.3	101	20 W	0034	4.1	125
	1021	-0.5	-15		0935	-1.2	-37
	1900	2.8*	85*				
6 W	0149	3.3	101	21 Th	0120	4.3	131
	1103	-0.7	-21		1030	-1.5	-46
	1900	2.9*	88*				
7 Th	0200	3.3	101	22 F	0209	4.3	131
	1140	-0.8	-24		1123	-1.6	-49
	1900	2.9*	88*				
8 F	0215	3.3	101	23 Sa	0308	4.2	128
	1217	-0.8	-24		1213	-1.6	-49
	2226	3.4	104				
9 Sa	0500	3.1*	94*	24 Su	0413	3.9	119
	1255	-0.9	-27		1301	-1.4	-43
	2248	3.4	104		2139	3.3	101
10 Su	0600	3.0*	91*	25 M	0058	3.0	91
	1328	-0.8	-24		0526	3.6	110
	2307	3.4	104		1350	-1.0	-30
					2153	3.3	101
11 M	0600	3.0*	91*	26 Tu	0223	2.5	79
	1403	-0.7	-21		0639	3.2	98
	2318	3.3	101		1430	-0.6	-18
					2211	3.3	101
12 Tu	0700	2.9*	88*	27 W	0339	2.1	64
	1435	-0.6	-18		0754	2.7	82
	2323	3.2	98		1512	-0.1	-3
					2233	3.4	104
13 W	0700	2.8*	85*	28 Th	0445	1.6	49
	1501	-0.3	-9		0924	2.4	73
	2325	3.2	98		1546	0.5	15
					2255	3.5	107
14 Th	0506	2.4	73	29 F	0547	1.1	34
	0727	2.5	76		1100	2.1	64
	1529	0.1	3		1618	1.1	34
	2319	3.1	94		2315	3.5	107
15 F	0541	1.9	58	30 Sa	0636	0.6	18
	0918	2.1	64		1244	2.0	61
	1554	0.6	18		1643	1.6	49
	2320	3.2	98		2337	3.5	107

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

MASSACRE BAY, ATTU ISLAND, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0729	0.2	6	16 M	0633	-0.1	-3
	2355	3.5	107		2251	4.0	122
2 M	0818	-0.1	-3	17 Tu	0725	-0.6	-18
					2324	4.2	128
3 Tu	0013	3.5	107	18 W	0820	-0.9	-27
	0901	-0.3	-9				
4 W	0035	3.6	110	19 Th	0009	4.3	131
	0948	-0.5	-15		0919	-1.2	-37
5 Th	0057	3.6	110	20 F	0101	4.3	131
	1033	-0.6	-18		1013	-1.2	-37
6 F	0121	3.6	110	21 Sa	0203	4.1	125
	1116	-0.7	-21		1109	-1.2	-37
	1900	3.0*	91*				
7 Sa	0151	3.5	107	22 Su	0313	3.8	116
	1156	-0.7	-21		1201	-1.0	-30
	2000	3.1*	94*		2035	3.0	91
					2335	2.8	85
8 Su	0218	3.5	107	23 M	0428	3.5	107
	1231	-0.7	-21		1247	-0.7	-21
	2221	3.3	101		2040	3.1	94
9 M	0103	3.2	98	24 Tu	0109	2.4	73
	0300	3.3	101		0548	3.1	94
	1307	-0.6	-18		1331	-0.3	-9
	2215	3.3	101		2054	3.1	94
10 Tu	0600	3.0*	91*	25 W	0220	1.9	58
	1335	-0.4	-12		0710	2.8	85
	2209	3.2	98		1410	0.1	3
					2114	3.2	98
11 W	0259	2.7	82	26 Th	0321	1.4	43
	0539	2.8	85		0831	2.5	76
	1407	-0.1	-3		1445	0.6	18
	2203	3.1	94		2134	3.2	98
12 Th	0338	2.3	70	27 F	0412	1.0	30
	0709	2.5	76		0951	2.3	70
	1433	0.3	9		1517	1.1	34
	2202	3.1	94		2154	3.3	101
13 F	0416	1.7	52	28 Sa	0502	0.6	18
	0839	2.2	67		1117	2.2	67
	1454	0.8	24		1542	1.6	49
	2203	3.2	98		2213	3.3	101
14 Sa	0455	1.1	34	29 Su	0551	0.3	9
	1021	2.0	61		1254	2.1	64
	1515	1.3	40		1607	2.0	61
	2211	3.5	107		2234	3.4	104
15 Su	0543	0.5	15	30 M	0636	0.0	0
	1216	2.0	61		2259	3.4	104
	1523	1.8	55				
	2226	3.7	113				
				31 Tu	0727	-0.2	-6
					2318	3.5	107

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0819	-0.3	-9	16 Th	0755	-1.0	-30
	2352	3.5	107		2357	3.9	119
2 Th	0909	-0.4	-12	17 F	0857	-0.9	-27
3 F	0022	3.5	107	18 Sa	0103	3.7	113
	1000	-0.5	-15		0955	-0.8	-24
4 Sa	0059	3.4	104	19 Su	0218	3.4	104
	1042	-0.5	-15		1053	-0.6	-18
	1900	2.8*	85*		1857	2.6	79
					2235	2.3	70
5 Su	0151	3.3	101	20 M	0348	3.1	94
	1127	-0.5	-15		1142	-0.3	-9
	1900	2.7*	82*		1909	2.7	82
					2358	1.9	58
6 M	0251	3.1	94	21 Tu	0514	2.8	85
	1205	-0.4	-12		1230	0.1	3
	2051	2.8	85		1925	2.7	82
7 Tu	0012	2.7	82	22 W	0103	1.4	43
	0406	2.9	88		0637	2.6	79
	1239	-0.1	-3		1309	0.5	15
	2038	2.8	85		1945	2.8	85
8 W	0118	2.3	70	23 Th	0159	1.0	30
	0532	2.7	82		0751	2.5	76
	1312	0.2	6		1348	0.9	27
	2031	2.8	85		2005	2.8	85
9 Th	0200	1.8	55	24 F	0242	0.6	18
	0652	2.5	76		0904	2.5	76
	1341	0.6	18		1427	1.3	40
	2029	2.8	85		2025	2.9	88
10 F	0242	1.2	37	25 Sa	0324	0.2	6
	0818	2.4	73		1013	2.4	73
	1406	1.0	30		1505	1.7	52
	2033	3.0	91		2045	2.9	88
11 Sa	0324	0.6	18	26 Su	0409	0.0	0
	0939	2.3	70		1125	2.4	73
	1431	1.5	46		1530	2.0	61
	2048	3.2	98		2107	3.0	91
12 Su	0412	0.1	3	27 M	0455	-0.1	-3
	1109	2.2	67		1242	2.4	73
	1446	1.9	58		1545	2.2	67
	2106	3.5	107		2129	3.1	94
13 M	0501	-0.4	-12	28 Tu	0540	-0.2	-6
	1251	2.2	67		2158	3.1	94
	1454	2.1	64				
	2138	3.8	116				
14 Tu	0554	-0.7	-21	29 W	0629	-0.2	-6
	2213	3.9	119		2227	3.2	98
15 W	0653	-0.9	-27	30 Th	0725	-0.2	-6
	2303	4.0	122		2309	3.2	98
				31 F	0818	-0.2	-6
					2348	3.1	94

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0911	-0.2	-6	16 Su	0131	2.9	88
	1700	2.4*	73*		0925	0.0	0
					1649	2.4	73
					2145	1.8	55
2 Su	0054	2.9	88	17 M	0311	2.6	79
	0957	-0.1	-3		1024	0.4	12
	1700	2.3*	70*		1713	2.5	76
					2300	1.3	40
3 M	0213	2.8	85	18 Tu	0447	2.5	76
	1044	0.1	3		1117	0.7	21
	1842	2.4	73		1739	2.6	79
	2247	2.1	64		2353	0.8	24
4 Tu	0339	2.6	79	19 W	0614	2.5	76
	1126	0.3	9		1206	1.1	34
	1836	2.4	73		1803	2.6	79
	2343	1.6	49				
5 W	0512	2.5	76	20 Th	0042	0.4	12
	1205	0.7	21		0728	2.6	79
	1833	2.4	73		1257	1.5	46
					1824	2.6	79
6 Th	0032	1.1	34	21 F	0124	0.1	3
	0636	2.5	76		0834	2.7	82
	1240	1.1	34		1342	1.8	55
	1837	2.6	79		1843	2.7	82
7 F	0113	0.5	15	22 Sa	0203	-0.2	-6
	0756	2.5	76		0933	2.8	85
	1312	1.5	46		1425	2.1	64
	1850	2.8	85		1907	2.7	82
8 Sa	0159	0.0	0	23 Su	0241	-0.3	-9
	0909	2.6	79		1032	2.8	85
	1341	1.9	58		1500	2.3	70
	1910	3.1	94		1926	2.8	85
9 Su	0245	-0.5	-15	24 M	0320	-0.4	-12
	1018	2.6	79		1127	2.7	82
	1409	2.2	67		1528	2.4	73
	1940	3.3	101		1948	2.8	85
10 M	0337	-0.8	-24	25 Tu	0402	-0.4	-12
	1134	2.6	79		1233	2.7	82
	1434	2.4	73		1547	2.5	76
	2017	3.5	107		2017	2.9	88
11 Tu	0429	-1.0	-30	26 W	0446	-0.3	-9
	1250	2.5	76		1339	2.6	79
	1459	2.4	73		1602	2.5	76
	2100	3.6	110		2049	2.9	88
12 W	0525	-1.0	-30	27 Th	0531	-0.2	-6
	2151	3.6	110		1300	2.4*	73*
					2131	2.9	88
13 Th	0624	-0.9	-27	28 F	0620	-0.1	-3
	2253	3.5	107		1400	2.4*	73*
					2220	2.8	85
14 F	0724	-0.7	-21	29 Sa	0709	0.1	3
	1601	2.4	73		1600	2.4	73
	1812	2.3	70		1900	2.3	70
					2326	2.6	79
15 Sa	0005	3.2	98	30 Su	0802	0.3	9
	0822	-0.4	-12		1606	2.4	73
	1623	2.4	73		2027	2.1	64
	2008	2.1	64				

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

MASSACRE BAY, ATTU ISLAND, ALASKA, 1990

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0106	2.4	73	16 Tu	0418	2.4	73
	0849	0.6	18		0935	1.5	46
	1609	2.4	73		1542	2.9	88
	2133	1.7	52		2252	0.4	12
2 Tu	0259	2.3	70	17 W	0555	2.6	79
	0941	1.0	30		1040	1.9	58
	1613	2.4	73		1606	2.9	88
	2227	1.1	34		2338	0.1	3
3 W	0443	2.4	73	18 Th	0711	2.8	85
	1030	1.4	43		1143	2.3	70
	1620	2.5	76		1629	2.9	88
	2313	0.5	15				
4 Th	0615	2.5	76	19 F	0016	-0.2	-6
	1113	1.8	55		0817	3.0	91
	1633	2.7	82		1245	2.5	76
	2356	-0.1	-3		1647	2.9	88
5 F	0733	2.8	85	20 Sa	0053	-0.4	-12
	1154	2.2	67		0909	3.2	98
	1653	3.0	91		1342	2.7	82
					1706	2.9	88
6 Sa	0045	-0.6	-18	21 Su	0129	-0.5	-15
	0842	2.9	88		0958	3.3	101
	1236	2.5	76		1431	2.9	88
	1722	3.3	101		1723	3.0	91
7 Su	0127	-1.0	-30	22 M	0205	-0.5	-15
	0947	3.1	94		1047	3.3	101
	1315	2.8	85		1511	2.9	88
	1801	3.5	107		1747	3.0	91
8 M	0216	-1.2	-37	23 Tu	0241	-0.5	-15
	1040	3.1	94		1132	3.3	101
	1350	2.8	85		1544	3.0	91
	1847	3.6	110		1812	3.1	94
9 Tu	0308	-1.3	-40	24 W	0320	-0.4	-12
	1135	3.0	91		1216	3.2	98
	1434	2.8	85		1613	2.9	88
	1938	3.6	110		1848	3.0	91
10 W	0400	-1.2	-37	25 Th	0359	-0.3	-9
	1221	2.9	88		1254	3.1	94
	1530	2.7	82		1656	2.9	88
	2036	3.5	107		1930	3.0	91
11 Th	0454	-0.9	-27	26 F	0438	-0.1	-3
	1306	2.9	88		1324	3.0	91
	1641	2.5	76		1749	2.7	82
	2139	3.3	101		2019	2.8	85
12 F	0546	-0.5	-15	27 Sa	0517	0.2	6
	1342	2.8	85		1341	3.0	91
	1812	2.3	70		1851	2.5	76
	2257	2.9	88		2134	2.6	79
13 Sa	0644	0.0	0	28 Su	0556	0.6	18
	1415	2.8	85		1349	2.9	88
	1942	1.9	58		1949	2.1	64
					2335	2.3	70
14 Su	0031	2.6	79	29 M	0635	1.0	30
	0737	0.5	15		1353	2.9	88
	1447	2.8	85		2042	1.6	49
	2057	1.4	43				
15 M	0227	2.4	73	30 Tu	0152	2.2	67
	0839	1.0	30		0714	1.5	46
	1514	2.9	88		1401	3.0	91
	2200	0.9	27		2121	1.0	30
				31 W	0407	2.3	70
					0758	2.0	61
					1412	3.2	98
					2203	0.3	9

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0607	2.7	82	16 F	0810	3.4	104
	0847	2.6	79		1057	3.3	101
	1429	3.4	104		1456	3.5	107
	2245	-0.3	-9		2351	-0.4	-12
2 F	0736	3.0	91	17 Sa	0906	3.6	110
	0936	2.9	88		1236	3.4	104
	1453	3.7	113		1503	3.5	107
	2330	-0.8	-24				
3 Sa	1530	3.9	119	18 Su	0026	-0.4	-12
					0947	3.8	116
					1700	3.4*	104*
4 Su	0019	-1.2	-37	19 M	0103	-0.5	-15
	0931	3.5	107		1020	3.8	116
	1133	3.4	104		1800	3.3*	101*
	1616	4.0	122				
5 M	0108	-1.4	-43	20 Tu	0138	-0.4	-12
	1006	3.6	110		1058	3.8	116
	1230	3.5	107		1800	3.4*	104*
	1712	4.1	125				
6 Tu	0157	-1.4	-43	21 W	0214	-0.3	-9
	1045	3.6	110		1129	3.8	116
	1338	3.4	104		1900	3.3*	101*
	1809	4.0	122				
7 W	0247	-1.2	-37	22 Th	0246	-0.2	-6
	1110	3.5	107		1151	3.7	113
	1448	3.2	98		1900	3.2*	98*
	1915	3.8	116				
8 Th	0334	-0.8	-24	23 F	0318	0.0	0
	1142	3.5	107		1207	3.7	113
	1609	2.9	88				
	2024	3.4	104				
9 F	0422	-0.4	-12	24 Sa	0347	0.3	9
	1210	3.5	107		1215	3.6	110
	1728	2.5	76				
	2143	3.0	91				
10 Sa	0508	0.2	6	25 Su	0418	0.7	21
	1237	3.5	107		1216	3.5	107
	1847	1.9	58		1903	2.3	70
	2323	2.6	79		2157	2.4	73
11 Su	0552	0.9	27	26 M	0442	1.2	37
	1306	3.5	107		1220	3.6	110
	1957	1.4	43		1931	1.7	52
12 M	0122	2.3	70	27 Tu	0021	2.2	67
	0637	1.5	46		0504	1.7	52
	1332	3.6	110		1225	3.7	113
	2059	0.9	27		2010	1.1	34
13 Tu	0333	2.4	73	28 W	1233	3.9	119
	0726	2.1	64		2050	0.4	12
	1355	3.6	110				
	2148	0.4	12				
14 W	0542	2.7	82	29 Th	1251	4.2	128
	0818	2.6	79		2134	-0.2	-6
	1418	3.6	110				
	2229	0.0	0				
15 Th	0718	3.1	94	30 F	1320	4.4	134
	0937	3.0	91		2223	-0.7	-21
	1439	3.6	110				
	2311	-0.2	-6				

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	1359	4.6	140	16 Su	0700	3.6*	110*
	2311	-1.1	-34		1343	4.0	122
2 Su	1445	4.7	143	17 M	0006	-0.3	-9
					1018	4.1	125
					1700	3.7*	113*
3 M	0002	-1.3	-40	18 Tu	0043	-0.3	-9
	1545	4.7	143		1034	4.1	125
					1700	3.7*	113*
4 Tu	0051	-1.3	-40	19 W	0115	-0.2	-6
	1648	4.5	137		1050	4.1	125
					1700	3.7*	113*
5 W	0140	-1.1	-34	20 Th	0147	-0.1	-3
	1019	3.9	119		1058	4.0	122
	1341	3.7	113		1800	3.5*	107*
	1800	4.1	125				
6 Th	0224	-0.7	-21	21 F	0216	0.1	3
	1036	3.9	119		1103	4.0	122
	1508	3.2	98				
	1909	3.7	113				
7 F	0309	-0.2	-6	22 Sa	0244	0.4	12
	1056	3.9	119		1101	3.9	119
	1630	2.7	82				
	2035	3.2	98				
8 Sa	0349	0.4	12	23 Su	0309	0.8	24
	1118	4.0	122		1101	3.9	119
	1737	2.1	64		1745	2.4	73
	2208	2.8	85		2035	2.6	79
9 Su	0427	1.0	30	24 M	0331	1.3	40
	1143	4.1	125		1100	3.9	119
	1842	1.5	46		1817	1.8	55
	2358	2.5	76		2258	2.3	70
10 M	0459	1.6	49	25 Tu	0343	1.8	55
	1207	4.1	125		1105	4.1	125
	1940	1.0	30		1849	1.2	37
11 Tu	0210	2.5	76	26 W	1113	4.3	131
	0524	2.3	70		1933	0.5	15
	1229	4.2	128				
	2033	0.5	15				
12 W	1251	4.2	128	27 Th	1134	4.6	140
	2119	0.2	6		2019	0.0	0
13 Th	1310	4.1	125	28 F	1203	4.8	146
	2201	0.0	0		2111	-0.5	-15
14 F	1328	4.1	125	29 Sa	1242	5.0	152
	2246	-0.2	-6		2204	-0.9	-27
15 Sa	0700	3.7*	113*	30 Su	1333	5.0	152
	1339	4.1	125		2256	-1.0	-30
	2326	-0.3	-9				
				31 M	1431	4.9	149
					2348	-1.0	-30

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

NUSHAGAK BAY (Clarks Pt.), ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0033	5.9	180	16	0117	2.8	85
M	0536	13.4	408	Tu	0714	15.4	469
	1155	1.6	49		1311	3.0	91
	1836	20.2	616		1933	19.2	585
2	0114	4.5	137	17	0201	2.1	64
Tu	0636	14.1	430	W	0813	15.7	479
	1247	2.5	76		1403	4.4	134
	1914	20.0	610		2011	18.2	555
3	0155	2.9	88	18	0245	1.5	46
W	0739	15.2	463	Th	0909	16.2	494
	1342	3.5	107		1458	5.7	174
	1951	19.7	600		2050	17.2	524
4	0237	1.2	37	19	0327	1.0	30
Th	0841	16.5	503	F	1004	16.8	512
	1441	4.6	140		1550	6.7	204
	2033	19.2	585		2127	16.3	497
5	0321	-0.6	-18	20	0408	0.6	18
F	0944	17.9	546	Sa	1056	17.3	527
	1541	5.5	168		1642	7.4	226
	2119	18.7	570		2204	15.6	475
6	0410	-2.1	-64	21	0451	0.3	9
Sa	1046	19.3	588	Su	1145	17.8	543
	1642	6.3	192		1735	8.0	244
	2207	18.2	555		2243	15.0	457
7	0459	-3.3	-101	22	0533	0.0	0
Su	1149	20.5	625	M	1234	18.2	555
	1746	6.8	207		1826	8.3	253
	2300	17.7	539		2325	14.6	445
8	0552	-4.1	-125	23	0617	-0.2	-6
M	1248	21.4	652	Tu	1319	18.6	567
	1848	7.0	213		1918	8.5	259
	2355	17.2	524				
9	0648	-4.4	-134	24	0007	14.3	436
Tu	1347	22.0	671	W	0700	-0.3	-9
	1949	6.9	210		1404	18.9	576
					2007	8.5	259
10	0054	16.7	509	25	0049	14.0	427
W	0741	-4.3	-131	Th	0743	-0.3	-9
	1443	22.3	680		1447	19.2	585
	2048	6.5	198		2056	8.2	250
11	0155	16.2	4	26	0138	13.9	424
Th	0839	-3.7	-113	F	0827	-0.1	-3
	1537	22.4	683		1528	19.5	594
	2147	6.0	183		2141	7.7	235
12	0259	15.8	482	27	0230	13.9	424
F	0933	-2.8	-85	Sa	0912	0.2	6
	1630	22.2	677		1607	19.6	597
	2242	5.2	158		2227	6.8	207
13	0402	15.4	469	28	0326	14.1	430
Sa	1027	-1.6	-49	Su	0959	0.7	21
	1719	21.8	664		1644	19.7	600
	2338	4.4	134		2309	5.6	171
14	0508	15.2	463	29	0426	14.6	445
Su	1123	-0.1	-3	M	1050	1.4	43
	1805	21.1	643		1721	19.6	597
					2351	4.2	128
15	0027	3.6	110	30	0526	15.3	466
M	0612	15.2	463	Tu	1142	2.3	70
	1218	1.5	46		1758	19.4	591
	1851	20.2	616				
				31	0035	2.5	76
				W	0628	16.4	500
					1238	3.3	101
					1840	19.1	582

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0118	0.8	24	16	0201	1.7	52
Th	0730	17.6	536	F	0836	17.1	521
	1335	4.3	131		1433	6.3	192
	1925	18.8	573		2007	15.6	475
2	0207	-0.8	-24	17	0244	1.4	43
F	0833	18.7	570	Sa	0925	17.4	530
	1434	5.1	155		1522	6.9	210
	2011	18.4	561		2046	15.2	463
3	0255	-2.1	-64	18	0325	1.0	30
Sa	0935	19.8	604	Su	1010	17.7	539
	1534	5.8	177		1611	7.4	226
	2100	18.1	552		2125	14.9	454
4	0349	-3.0	-91	19	0408	0.7	21
Su	1034	20.5	625	M	1059	18.0	549
	1633	6.2	189		1658	7.7	235
	2152	17.7	539		2204	14.7	448
5	0442	-3.6	-110	20	0451	0.5	15
M	1133	21.1	643	Tu	1145	18.2	555
	1734	6.4	195		1747	7.9	241
	2251	17.3	527		2246	14.6	445
6	0537	-3.7	-113	21	0536	0.3	9
Tu	1232	21.3	649	W	1229	18.4	561
	1833	6.4	195		1836	7.8	238
	2348	16.9	515		2334	14.6	445
7	0633	-3.4	-104	22	0621	0.3	9
W	1330	21.4	652	Th	1315	18.6	567
	1930	6.1	186		1921	7.5	229
8	0049	16.5	503	23	0023	14.6	445
Th	0728	-2.7	-82	F	0709	0.4	12
	1423	21.2	646		1357	18.8	573
	2029	5.7	174		2007	6.9	210
9	0152	16.2	494	24	0116	14.9	454
F	0824	-1.8	-55	Sa	0758	0.7	21
	1515	20.9	637		1437	18.8	573
	2124	5.1	155		2055	6.0	183
10	0257	15.9	485	25	0213	15.3	466
Sa	0919	-0.5	-15	Su	0847	1.2	37
	1605	20.4	622		1518	18.8	573
	2217	4.4	134		2137	4.7	143
11	0358	15.7	479	26	0315	16.0	488
Su	1015	0.8	24	M	0939	1.9	58
	1651	19.7	600		1558	18.6	567
	2308	3.8	116		2223	3.2	98
12	0501	15.7	479	27	0415	17.0	518
M	1107	2.2	67	Tu	1035	2.6	79
	1734	18.8	573		1641	18.4	561
	2354	3.1	94		2308	1.6	49
13	0558	15.9	485	28	0517	18.1	552
Tu	1159	3.4	104	W	1132	3.4	104
	1815	17.9	546		1723	18.2	555
					2357	0.1	3
14	0039	2.6	79				
W	0654	16.3	497				
	1251	4.6	140				
	1854	17.0	518				
15	0121	2.1	64				
Th	0747	16.7	509				
	1343	5.5	168				
	1932	16.2	494				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0619	19.2	585	16	0037	2.1	64
Th	1229	4.0	122	F	0715	17.8	543
	1811	18.0	549		1326	6.3	192
					1850	14.4	439
2	0046	-1.2	-37	17	0117	1.9	58
F	0718	20.2	616	Sa	0800	18.0	549
	1328	4.6	140		1409	6.7	204
	1900	17.7	539		1928	14.1	430
3	0139	-2.3	-70	18	0158	1.7	52
Sa	0817	20.9	637	Su	0843	18.2	555
	1425	5.0	152		1455	6.9	210
	1952	17.5	533		2006	14.0	427
4	0232	-2.9	-88	19	0240	1.5	46
Su	0916	21.3	649	M	0925	18.3	558
	1524	5.3	162		1540	7.1	216
	2048	17.4	530		2046	14.1	430
5	0327	-3.1	-94	20	0325	1.3	40
M	1015	21.4	652	Tu	1010	18.4	561
	1621	5.4	165		1626	7.1	216
	2147	17.2	524		2131	14.2	433
6	0426	-2.9	-88	21	0410	1.2	37
Tu	1114	21.3	649	W	1054	18.5	564
	1720	5.3	162		1711	6.9	210
	2246	16.9	515		2217	14.4	439
7	0522	-2.3	-70	22	0457	1.3	40
W	1210	21.0	640	Th	1136	18.5	564
	1819	5.0	152		1753	6.4	195
	2349	16.7	509		2309	14.8	451
8	0620	-1.4	-43	23	0545	1.4	43
Th	1305	20.5	625	F	1219	18.5	564
	1914	4.6	140		1839	5.7	174
9	0052	16.5	503	24	0006	15.3	466
F	0716	-0.3	-9	Sa	0634	1.8	55
	1358	19.9	607		1302	18.4	561
	2007	4.1	125		1924	4.6	140
10	0156	16.4	500	25	0104	16.1	491
Sa	0812	0.9	27	Su	0730	2.3	70
	1446	19.1	582		1344	18.2	555
	2059	3.7	113		2008	3.3	101
11	0259	16.4	500	26	0205	17.2	524
Su	0908	2.1	64	M	0825	2.9	88
	1533	18.2	555		1427	17.9	546
	2147	3.2	98		2054	1.8	55
12	0356	16.6	506	27	0304	18.4	561
M	1001	3.3	101	Tu	0924	3.5	107
	1618	17.3	527		1512	17.6	536
	2233	2.9	88		2140	0.3	9
13	0452	16.9	515	28	0406	19.7	600
Tu	1055	4.3	131	W	1023	4.0	122
	1700	16.4	500		1558	17.3	527
	2315	2.6	79		2230	-1.1	-34
14	0543	17.2	524	29	0505	20.9	637
W	1147	5.1	155	Th	1121	4.3	131
	1736	15.5	472		1650	17.1	521
	2355	2.3	70		2323	-2.2	-67
15	0630	17.5	533	30	0604	21.8	664
Th	1236	5.8	177	F	1219	4.6	140
	1814	14.8	451		1743	16.9	515
				31	0017	-2.9	-88
				Sa	0703	22.4	683
					1318	4.6	140
					1841	16.9	515

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NUSHAGAK BAY (Clarks Pt.), ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0112	-3.2	-98	16	0115	1.8	55
Su	0759	22.6	689	M	0806	19.0	579
	1415	4.6	140		1429	6.9	210
	1938	16.8	512		1927	13.0	396
2	0210	-3.0	-91	17	0157	1.8	55
M	0858	22.4	683	Tu	0845	19.1	582
	1510	4.4	134		1511	6.7	204
	2039	16.7	509		2013	13.3	405
3	0308	-2.4	-73	18	0242	1.9	58
Tu	0955	22.0	671	W	0926	19.1	582
	1608	4.1	125		1553	6.2	189
	2143	16.7	509		2100	13.7	418
4	0407	-1.5	-46	19	0328	2.1	64
W	1049	21.3	649	Th	1005	19.0	579
	1704	3.7	113		1635	5.5	168
	2247	16.6	506		2155	14.2	433
5	0506	-0.3	-9	20	0418	2.4	73
Th	1143	20.5	625	F	1044	18.8	573
	1759	3.2	98		1717	4.5	137
	2353	16.7	509		2251	15.1	460
6	0605	1.0	30	21	0509	3.0	91
F	1234	19.6	597	Sa	1125	18.6	567
	1852	2.7	82		1802	3.2	98
					2351	16.2	494
7	0056	16.8	512	22	0605	3.6	110
Sa	0702	2.4	73	Su	1207	18.2	555
	1324	18.5	564		1844	1.8	55
	1941	2.3	70				
8	0159	17.0	518	23	0053	17.6	536
Su	0800	3.6	110	M	0705	4.2	128
	1410	17.4	530		1252	17.8	543
	2030	2.0	61		1930	0.2	6
9	0256	17.4	530	24	0153	18.2	585
M	0856	4.7	143	Tu	0806	4.7	143
	1454	16.2	494		1338	17.3	527
	2113	1.9	58		2016	-1.3	-40
10	0351	17.8	543	25	0255	20.7	631
Tu	0951	5.5	168	W	0908	5.1	155
	1536	15.2	463		1430	16.9	515
	2154	1.8	55		2108	-2.5	-76
11	0439	18.2	555	26	0354	22.0	671
W	1045	6.1	186	Th	1008	5.2	158
	1615	14.3	436		1522	16.6	506
	2235	1.8	55		2201	-3.4	-104
12	0525	18.5	564	27	0453	23.0	701
Th	1133	6.5	198	F	1108	5.1	155
	1653	13.6	415		1621	16.4	500
	2313	1.9	58		2255	-3.9	-119
13	0604	18.7	570	28	0549	23.5	716
F	1220	6.7	204	Sa	1206	4.9	149
	1729	13.1	399		1720	16.3	497
	2353	1.9	58		2352	-3.8	-116
14	0646	18.8	573	29	0646	23.6	719
Sa	1305	6.9	210	Su	1303	4.5	137
	1807	12.9	393		1822	16.2	494
15	0034	1.8	55	30	0051	-3.3	-101
Su	0725	19.0	579	M	0742	23.4	713
	1349	6.9	210		1359	4.0	122
	1842	12.9	393		1925	16.2	494

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0148	-2.4	-73	16	0118	2.0	61
Tu	0835	22.9	698	W	0807	19.7	600
	1457	3.3	101		1445	6.0	183
	2031	16.2	494		1945	12.8	390
2	0247	-1.1	-34	17	0203	2.4	73
W	0928	22.1	674	Th	0842	19.6	597
	1552	2.6	79		1521	5.0	152
	2138	16.3	497		2039	13.5	411
3	0346	0.4	12	18	0252	3.0	91
Th	1021	21.1	643	F	0921	19.4	591
	1645	2.0	61		1603	3.8	116
	2243	16.5	503		2139	14.5	442
4	0447	2.0	61	19	0345	3.8	116
F	1110	19.9	607	Sa	0958	19.0	579
	1737	1.4	43		1641	2.3	70
	2350	16.9	515		2240	15.9	485
5	0546	3.5	107	20	0444	4.6	140
Sa	1158	18.6	567	Su	1039	18.6	567
	1824	1.0	30		1724	0.7	21
					2342	17.5	533
6	0052	17.3	527	21	0544	5.3	162
Su	0645	4.8	146	M	1121	18.1	552
	1243	17.2	524		1809	-1.0	-30
	1910	0.7	21				
7	0153	17.9	546	22	0042	19.2	585
M	0744	5.9	180	Tu	0645	5.9	180
	1326	15.9	485		1207	17.6	536
	1956	0.7	21		1858	-2.5	-76
8	0247	18.4	561	23	0141	20.8	634
Tu	0841	6.6	201	W	0749	6.3	192
	1408	14.7	448		1258	17.1	521
	2035	0.7	21		1949	-3.7	-113
9	0336	18.8	573	24	0240	22.2	677
W	0937	7.1	216	Th	0851	6.3	192
	1447	13.8	421		1354	16.7	509
	2117	0.9	27		2041	-4.4	-134
10	0420	19.1	582	25	0339	23.2	707
Th	1027	7.3	223	F	0951	6.1	186
	1529	13.0	396		1454	16.4	500
	2156	1.1	34		2136	-4.7	-143
11	0500	19.4	591	26	0436	23.8	725
F	1116	7.4	226	Sa	1050	5.6	171
	1607	12.5	381		1555	16.1	491
	2236	1.2	37		2233	-4.5	-137
12	0542	19.5	594	27	0532	24.0	732
Sa	1200	7.4	226	Su	1149	5.0	152
	1643	12.2	372		1701	16.0	488
	2315	1.4	43		2330	-3.8	-116
13	0617	19.6	597	28	0625	23.9	728
Su	1243	7.3	223	M	1247	4.2	128
	1725	12.1	369		1807	15.8	482
	2354	1.5	46				
14	0655	19.7	600	29	0029	-2.7	-82
M	1325	7.1	216	Tu	0718	23.4	713
	1807	12.2	372		1343	3.3	101
					1914	15.8	482
15	0036	1.7	52	30	0128	-1.2	-37
Tu	0731	19.7	600	W	0811	22.6	689
	1404	6.7	204		1436	2.3	70
	1853	12.4	378		2022	15.9	485
				31	0225	0.6	18
				Th	0900	21.6	658
					1528	1.5	46
					2129	16.2	494

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0326	2.3	70	16	0227	4.1	125
F	0946	20.3	619	Sa	0839	19.3	588
	1618	0.7	21		1528	1.9	58
	2236	16.6	506		2129	15.6	475
2	0425	4.0	122	17	0324	5.0	152
Sa	1032	19.0	579	Su	0919	18.9	576
	1707	0.2	6		1610	0.2	6
	2341	17.2	524		2229	17.2	524
3	0524	5.4	165	18	0425	5.9	180
Su	1117	17.6	536	M	1000	18.4	561
	1753	-0.1	-3		1655	-1.5	-46
					2329	18.8	573
4	0037	17.9	546	19	0527	6.6	201
M	0624	6.6	201	Tu	1048	17.9	546
	1159	16.3	497		1742	-2.9	-88
	1835	-0.2	-6				
5	0136	18.4	561	20	0029	20.4	622
Tu	0721	7.3	223	W	0630	7.0	213
	1240	15.1	460		1138	17.5	533
	1918	-0.1	-3		1832	-4.1	-125
6	0225	18.9	576	21	0129	21.6	658
W	0817	7.8	238	Th	0731	7.1	216
	1322	14.1	430		1234	17.1	521
	1959	0.0	0		1927	-4.8	-146
7	0313	19.3	588	22	0226	22.6	689
Th	0909	8.1	247	F	0832	6.9	210
	1401	13.3	405		1332	16.7	509
	2040	0.2	6		2021	-5.0	-152
8	0355	19.5	594	23	0323	23.2	707
F	0959	8.1	247	Sa	0932	6.4	195
	1439	12.7	387		1435	16.4	500
	2119	0.4	12		2117	-4.7	-143
9	0434	19.7	600	24	0419	23.5	716
Sa	1046	8.1	247	Su	1031	5.7	174
	1521	12.3	375		1540	16.1	491
	2201	0.6	18		2214	-3.9	-119
10	0513	19.8	604	25	0511	23.4	713
Su	1132	7.9	241	M	1130	4.8	146
	1601	12.1	369		1647	15.9	485
	2240	0.9	27		2312	-2.7	-82
11	0548	19.9	607	26	0604	23.0	701
M	1214	7.5	229	Tu	1226	3.7	113
	1649	12.0	366		1755	15.8	482
	2321	1.3	40				
12	0624	19.9	607	27	0010	-1.2	-37
Tu	1253	6.9	210	W	0654	22.4	683
	1738	12.1	369		1318	2.6	79
					1901	15.8	482
13	0000	1.8	55	28	0106	0.6	18
W	0656	19.9	607	Th	0740	21.5	655
	1334	6.1	186		1410	1.7	52
	1832	12.5	381		2009	16.1	491
14	0046	2.4	73	29	0205	2.3	70
Th	0728	19.8	604	F	0827	20.3	619
	1410	5.0	152		1459	0.9	27
	1928	13.2	402		2115	16.5	503
15	0135	3.2	98	30	0301	4.0	122
F	0805	19.6	597	Sa	0910	19.1	582
	1449	3.6	110		1546	0.3	9
	2027	14.3	436		2217	17.0	518

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NUSHAGAK BAY (Clarks Pt.), ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0400	5.5	168	16 M	0314	5.8	177
	0952	17.8	543		0849	18.3	558
	1632	-0.1	-3		1541	-1.4	-43
	2316	17.6	536		2216	18.8	573
2 M	0457	6.6	201	17 Tu	0413	6.5	198
	1034	16.6	506		0935	18.0	549
	1715	-0.3	-9		1629	-2.8	-85
					2315	20.0	610
3 Tu	0011	18.1	552	18 W	0513	6.9	210
	0553	7.4	226		1026	17.7	539
	1115	15.6	475		1721	-3.8	-116
	1757	-0.4	-12				
4 W	0102	18.5	564	19 Th	0013	21.0	640
	0649	8.0	244		0613	7.1	216
	1154	14.7	448		1118	17.4	530
	1840	-0.3	-9		1815	-4.3	-131
5 Th	0149	18.9	576	20 F	0112	21.7	661
	0743	8.4	256		0713	7.0	213
	1236	14.0	427		1221	17.1	521
	1923	-0.2	-6		1910	-4.5	-137
6 F	0234	19.1	582	21 Sa	0209	22.2	677
	0833	8.5	259		0814	6.6	201
	1319	13.5	411		1321	16.8	512
	2005	-0.1	-3		2006	-4.1	-125
7 Sa	0320	19.3	588	22 Su	0305	22.3	680
	0922	8.5	259		0913	5.9	180
	1401	13.1	399		1426	16.5	503
	2046	0.2	6		2103	-3.3	-101
8 Su	0358	19.5	594	23 M	0358	22.3	680
	1011	8.2	250		1009	5.0	152
	1444	12.8	390		1531	16.2	494
	2128	0.5	15		2200	-2.1	-64
9 M	0436	19.6	597	24 Tu	0448	21.9	668
	1053	7.8	238		1104	4.1	125
	1533	12.7	387		1638	16.1	491
	2210	0.9	27		2257	-0.7	-21
10 Tu	0511	19.7	600	25 W	0537	21.3	649
	1135	7.1	216		1157	3.1	94
	1626	12.7	387		1745	16.1	491
	2254	1.5	46		2355	0.9	27
11 W	0545	19.6	597	26 Th	0624	20.5	625
	1217	6.1	186		1249	2.2	67
	1719	13.1	399		1850	16.3	497
	2341	2.2	67				
12 Th	0618	19.5	594	27 F	0050	2.5	76
	1255	4.9	149		0709	19.5	594
	1817	13.7	418		1337	1.4	43
					1952	16.7	509
13 F	0028	3.1	94	28 Sa	0146	3.9	119
	0654	19.3	588		0752	18.5	564
	1331	3.5	107		1423	0.9	27
	1917	14.8	451		2051	17.1	521
14 Sa	0119	4.0	122	29 Su	0240	5.2	158
	0728	19.0	579		0834	17.4	530
	1413	1.8	55		1509	0.5	15
	2015	16.0	488		2148	17.5	533
15 Su	0215	5.0	152	30 M	0336	6.2	189
	0806	18.7	570		0913	16.5	503
	1455	0.1	3		1551	0.3	9
	2117	17.4	530		2240	17.8	543
				31 Tu	0428	7.0	213
					0954	15.7	479
					1637	0.1	3
					2332	18.1	552

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0521	7.6	232	16 Th	0500	6.4	195
	1036	15.1	460		1015	17.3	527
	1719	0.1	3		1704	-3.5	-107
					2355	21.2	646
2 Th	0018	18.3	558	17 F	0557	6.3	192
	0612	8.0	244		1114	17.2	524
	1118	14.6	445		1800	-3.4	-104
	1804	0.0	0				
3 F	0105	18.5	564	18 Sa	0053	21.3	649
	0702	8.2	250		0658	6.0	183
	1200	14.2	433		1216	17.0	518
	1846	0.1	3		1858	-2.9	-88
4 Sa	0151	18.7	570	19 Su	0148	21.2	646
	0751	8.2	250		0755	5.4	165
	1244	14.0	427		1321	16.8	512
	1932	0.3	9		1954	-2.0	-61
5 Su	0233	18.8	573	20 M	0241	21.0	640
	0839	9.0	244		0851	4.6	140
	1329	13.8	421		1425	16.7	509
	2015	0.6	18		2053	-0.9	-27
6 M	0314	18.9	576	21 Tu	0332	20.5	625
	0925	7.5	229		0946	3.8	116
	1422	13.7	418		1531	16.6	506
	2059	1.0	30		2148	0.4	12
7 Tu	0350	18.9	576	22 W	0421	19.8	604
	1007	6.8	207		1039	3.0	91
	1514	13.9	424		1634	16.8	512
	2145	1.6	49		2247	1.8	55
8 W	0425	18.8	573	23 Th	0506	19.0	579
	1049	5.8	177		1127	2.3	70
	1610	14.3	436		1735	17.0	518
	2233	2.3	70		2339	3.1	94
9 Th	0501	18.7	570	24 F	0551	18.0	549
	1131	4.5	137		1213	1.8	55
	1708	15.1	460		1834	17.3	527
	2323	3.1	94				
10 F	0538	18.5	564	25 Sa	0034	4.2	128
	1210	3.1	94		0634	17.1	521
	1807	16.1	491		1257	1.5	46
					1928	17.6	536
11 Sa	0015	3.9	119	26 Su	0127	5.1	155
	0615	18.2	555		0714	16.3	497
	1252	1.5	46		1341	1.2	37
	1904	17.2	524		2020	17.9	546
12 Su	0111	4.7	143	27 M	0219	5.9	180
	0656	18.0	549		0755	15.6	475
	1339	0.0	0		1424	1.1	34
	2003	18.4	561		2109	18.0	549
13 M	0207	5.4	165	28 Tu	0309	6.5	198
	0739	17.8	543		0836	15.1	460
	1426	-1.4	-43		1509	1.0	30
	2102	19.5	594		2157	18.1	552
14 Tu	0304	5.9	180	29 W	0358	7.0	213
	0827	17.6	536		0915	14.7	448
	1515	-2.5	-76		1552	0.9	27
	2200	20.3	619		2243	18.2	555
15 W	0403	6.3	192	30 Th	0445	7.3	223
	0919	17.5	533		0957	14.5	442
	1608	-3.2	-98		1638	0.8	24
	2259	20.9	637		2330	18.2	555
				31 F	0533	7.4	226
					1040	14.4	439
					1723	0.9	27

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0015	18.2	555	16 Su	0028	20.7	631
	0619	7.4	226		0641	4.1	125
	1126	14.4	439		1221	16.9	515
	1809	1.0	30		1846	-0.5	-15
2 Su	0057	18.3	558	17 M	0121	20.1	613
	0708	7.1	216		0736	3.5	107
	1217	14.4	439		1327	17.0	518
	1856	1.3	40		1945	0.8	24
3 M	0138	18.2	555	18 Tu	0214	19.3	588
	0753	6.6	201		0829	2.8	85
	1309	14.6	445		1431	17.2	524
	1945	1.7	52		2041	2.0	61
4 Tu	0219	18.1	552	19 W	0300	18.4	561
	0836	5.8	177		0918	2.3	70
	1403	15.1	460		1532	17.5	533
	2032	2.2	67		2140	3.2	98
5 W	0256	18.0	549	20 Th	0349	17.4	530
	0918	4.7	143		1006	1.9	58
	1459	15.8	482		1632	17.9	546
	2123	2.9	88		2237	4.1	125
6 Th	0335	17.7	539	21 F	0431	16.4	500
	1000	3.5	107		1051	1.7	52
	1559	16.7	509		1724	18.2	555
	2218	3.5	107		2330	4.9	149
7 F	0417	17.5	533	22 Sa	0516	15.5	472
	1045	2.1	64		1134	1.6	49
	1654	17.8	543		1813	18.5	564
	2311	4.1	125				
8 Sa	0456	17.2	524	23 Su	0023	5.6	171
	1130	0.7	21		0555	14.8	451
	1753	19.0	579		1217	1.6	49
					1902	18.6	567
9 Su	0006	4.7	143	24 M	0110	6.0	183
	0541	17.1	521		0637	14.2	433
	1216	-0.6	-18		1300	1.6	49
	1850	20.0	610		1947	18.7	570
10 M	0101	5.1	155	25 Tu	0159	6.4	195
	0627	17.0	518		0715	13.9	424
	1305	-1.7	-52		1341	1.6	49
	1947	20.8	634		2029	18.7	570
11 Tu	0200	5.3	162	26 W	0242	6.6	201
	0719	16.9	515		0757	13.8	421
	1358	-2.4	-73		1425	1.6	49
	2043	21.3	649		2112	18.6	567
12 W	0255	5.5	168	27 Th	0327	6.7	204
	0814	17.0	518		0838	13.8	421
	1454	-2.8	-85		1509	1.6	49
	2142	21.5	655		2154	18.5	564
13 Th	0351	5.4	165	28 F	0413	6.7	204
	0913	17.0	518		0921	13.9	424
	1550	-2.7	-82		1554	1.7	52
	2238	21.4	652		2238	18.4	561
14 F	0446	5.1	155	29 Sa	0457	6.5	198
	1013	17.0	518		1007	14.1	430
	1648	-2.3	-70		1643	2.0	61
	2334	21.2	646		2320	18.3	558
15 Sa	0545	4.7	143	30 Su	0540	6.1	186
	1115	16.9	515		1103	14.4	439
	1747	-1.5	-46		1729	2.3	70

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NUSHAGAK BAY (Clarks Pt.), ALASKA, 1990

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0002	18.1	552	16 Tu	0050	18.9	576
	0625	5.4	165		0712	1.4	43
	1156	14.9	454		1332	17.7	539
	1820	2.7	85		1934	3.6	110
2 Tu	0039	17.9	546	17 W	0139	17.7	539
	0706	4.4	134		0800	1.0	30
	1253	15.7	479		1435	18.2	555
	1913	3.4	104		2035	4.6	140
3 W	0121	17.5	533	18 Th	0225	16.5	503
	0748	3.2	98		0848	0.9	27
	1348	16.8	512		1531	18.6	567
	2008	3.9	119		2130	5.4	165
4 Th	0201	17.2	524	19 F	0309	15.4	469
	0832	1.9	58		0939	0.9	27
	1444	16.0	549		1623	19.0	579
	2104	4.5	137		2226	6.0	183
5 F	0243	16.8	512	20 Sa	0353	14.4	439
	0916	0.6	18		1014	1.0	30
	1543	19.3	588		1708	19.2	585
	2201	4.9	149		2317	6.4	195
6 Sa	0329	16.5	503	21 Su	0434	13.6	415
	1003	-0.7	-21		1056	1.2	37
	1642	20.6	628		1754	19.4	591
	2258	5.1	155				
7 Su	0416	16.3	497	22 M	0007	6.6	201
	1052	-1.8	-55		0515	13.1	399
	1737	21.6	658		1135	1.4	43
	2354	5.2	159		1833	19.4	591
8 M	0509	16.3	497	23 Tu	0052	6.7	204
	1145	-2.6	-79		0555	12.8	390
	1833	22.3	680		1217	1.6	49
					1912	19.3	588
9 Tu	0050	5.1	155	24 W	0134	6.8	207
	0604	16.3	497		0636	12.7	387
	1240	-3.0	-91		1259	1.8	55
	1929	22.6	689		1953	19.3	588
10 W	0147	4.9	149	25 Th	0219	6.7	204
	0703	16.4	500		0718	12.7	387
	1336	-2.9	-88		1342	2.0	61
	2024	22.6	689		2032	19.2	585
11 Th	0243	4.5	137	26 F	0302	6.4	195
	0804	16.5	503		0803	12.9	393
	1435	-2.5	-76		1426	2.3	70
	2121	22.3	680		2110	19.0	579
12 F	0339	4.0	122	27 Sa	0340	6.0	183
	0908	16.6	506		0853	13.3	405
	1532	-1.6	-49		1511	2.7	82
	2215	21.7	661		2148	18.8	573
13 Sa	0434	3.4	104	28 Su	0422	5.3	162
	1015	16.7	509		0945	13.8	421
	1633	-0.4	-12		1600	3.2	98
	2307	21.0	640		2224	18.6	567
14 Su	0527	2.6	79	29 M	0501	4.3	131
	1122	16.9	515		1041	14.6	445
	1732	0.9	27		1653	3.8	116
					2304	18.2	555
15 M	0000	20.0	610	30 Tu	0543	3.2	98
	0621	2.0	61		1138	15.7	479
	1228	17.2	524		1748	4.5	137
	1834	2.3	70		2343	17.7	539
				31 W	0624	1.8	55
					1237	17.1	521
					1845	5.2	158

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0025	17.3	527	16 F	0145	15.1	460
	0706	0.4	12		0815	-0.1	-3
	1336	18.6	567		1519	19.4	591
	1944	5.7	174		2117	7.0	213
2 F	0109	16.8	512	17 Sa	0230	14.0	427
	0752	-1.0	-30		0857	0.2	6
	1432	20.1	613		1605	19.7	600
	2042	5.9	180		2210	7.3	223
3 Sa	0157	16.4	500	18 Su	0312	13.2	402
	0841	-2.2	-67		0939	0.5	15
	1530	21.5	655		1647	19.8	604
	2142	6.0	183		2259	7.4	226
4 Su	0246	16.2	494	19 M	0351	12.6	384
	0931	-3.2	-98		1019	0.9	27
	1623	22.6	689		1729	19.8	604
	2242	5.9	180		2347	7.4	226
5 M	0345	16.0	488	20 Tu	0433	12.2	372
	1024	-3.8	-116		1059	1.2	37
	1719	23.3	710		1806	19.8	604
	2338	6.5	198				
6 Tu	0444	16.0	488	21 W	0029	7.3	223
	1120	-3.9	-119		0515	12.0	366
	1816	23.7	722		1141	1.5	46
					1842	19.7	600
7 W	0033	5.0	152	22 Th	0112	7.0	213
	0545	16.0	488		0557	12.0	366
	1218	-3.6	-110		1221	1.9	58
	1910	23.6	719		1918	19.7	600
8 Th	0131	4.2	128	23 F	0151	6.6	201
	0651	16.1	491		0643	12.1	369
	1317	-2.7	-82		1303	2.3	70
	2004	23.2	707		1952	19.5	594
9 F	0227	3.4	104	24 Sa	0229	5.9	180
	0758	16.2	494		0733	12.5	381
	1416	-1.5	-46		1347	2.9	88
	2057	22.6	689		2029	19.3	588
10 Sa	0320	2.4	73	25 Su	0308	5.0	152
	0905	16.4	500		0829	13.1	399
	1515	0.0	0		1436	3.6	110
	2146	21.6	658		2101	19.1	582
11 Su	0415	1.5	46	26 M	0347	3.9	119
	1014	16.7	509		0925	14.1	430
	1617	1.7	52		1525	4.4	134
	2236	20.5	625		2138	18.7	570
12 M	0507	0.7	21	27 Tu	0425	2.5	76
	1122	17.2	524		1024	15.3	466
	1717	3.3	101		1621	5.3	162
	2327	19.2	585		2215	18.2	555
13 Tu	0557	0.1	3	28 W	0503	1.0	30
	1229	17.8	543		1122	16.8	512
	1819	4.7	143		1720	6.0	183
					2254	17.7	539
14 W	0014	17.8	543	29 Th	0546	-0.6	-18
	0645	-0.2	-6		1221	18.5	564
	1328	18.5	564		1820	6.6	201
	1921	5.8	177		2338	17.3	527
15 Th	0059	16.4	500	30 F	0631	-2.1	-64
	0731	-0.3	-9		1317	20.1	613
	1427	19.0	579		1921	6.9	210
	2019	6.5	198				

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0028	16.9	515	16 Su	0148	13.5	411
	0720	-3.3	-101		0825	-0.1	-3
	1415	21.6	658		1539	19.7	600
	2021	7.0	213		2145	8.1	247
2 Su	0121	16.5	503	17 M	0230	12.9	393
	0811	-4.2	-128		0907	0.2	6
	1512	22.7	692		1621	19.8	604
	2121	6.7	204		2230	8.0	244
3 M	0220	16.3	497	18 Tu	0312	12.4	378
	0907	-4.7	-143		0948	0.6	18
	1608	23.5	716		1659	19.8	604
	2220	6.2	189		2318	7.8	238
4 Tu	0320	16.2	494	19 W	0354	12.1	369
	1002	-4.7	-143		1027	1.0	30
	1703	23.9	728		1735	19.7	600
	2319	5.5	168				
5 W	0424	16.1	491	20 Th	0001	7.5	229
	1100	-4.2	-128		0437	12.0	366
	1755	23.9	728		1108	1.5	46
					1810	19.7	600
6 Th	0016	4.5	137	21 F	0040	6.8	210
	0531	16.0	488		0528	12.0	366
	1159	-3.2	-98		1150	2.1	64
	1848	23.6	719		1842	19.6	597
7 F	0110	3.4	104	22 Sa	0118	6.1	186
	0640	16.1	491		0618	12.3	375
	1257	-1.7	-52		1233	2.9	88
	1940	23.0	701		1914	19.4	591
8 Sa	0206	2.2	67	23 Su	0156	5.1	155
	0748	16.3	497		0714	12.9	393
	1357	0.0	0		1318	3.7	113
	2029	22.1	674		1947	19.1	582
9 Su	0258	1.1	34	24 M	0232	3.8	116
	0858	16.6	506		0809	13.9	424
	1457	1.8	55		1407	4.6	140
	2118	20.9	637		2019	18.8	573
10 M	0353	0.1	3	25 Tu	0307	2.4	73
	1009	17.1	521		0909	15.1	460
	1558	3.6	110		1502	5.5	168
	2205	19.6	597		2055	18.4	561
11 Tu	0442	-0.5	-15	26 W	0346	0.8	24
	1115	17.8	543		1005	16.6	506
	1658	5.1	155		1601	6.3	192
	2253	18.2	555		2133	18.0	549
12 W	0529	-0.9	-27	27 Th	0429	-0.8	-24
	1217	18.4	561		1104	18.2	555
	1800	6.3	192		1700	6.9	210
	2338	16.8	512		2218	17.7	539
13 Th	0615	-0.9	-27	28 F	0515	-2.3	-70
	1313	18.9	576		1200	19.7	600
	1900	7.1	216		1800	7.3	223
					2307	17.4	530
14 F	0021	15.5	472	29 Sa	0604	-3.6	-110
	0658	-0.8	-24		1258	21.0	640
	1408	19.3	588		1900	7.5	229
	1957	7.7	235				
15 Sa	0106	14.4	439	30 Su	0000	17.1	521
	0743	-0.5	-15		0657	-4.5	-137
	1454	19.6	597		1356	22.1	674
	2053	8.0	244		2000	7.3	223
				31 M	0058	16.9	515
					0751	-4.9	-149
					1452	22.8	695
					2059	6.8	207

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ST. MICHAEL, ALASKA, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0858	-0.3	-9	16 Tu	0051	3.6	110
					0851	0.1	3
					1624	2.4	73
					1901	2.3	70
2 Tu	0011	4.1	125	17 W	0123	3.0	91
	0859	-0.1	-3		0857	0.4	12
					1632	2.8	85
					2157	2.3	70
3 W	0042	3.6	110	18 Th	0148	2.4	73
	0900	0.1	3		0855	0.6	18
	1705	2.5	76		1653	3.2	98
	1922	2.4	73				
4 Th	0102	3.0	91	19 F	0850	0.7	21
	0901	0.3	9		1719	3.5	107
	1659	3.0	91				
	2215	2.2	67				
5 F	0045	2.3	70	20 Sa	0846	0.7	21
	0906	0.3	9		1747	3.8	116
	1721	3.6	110				
6 Sa	0915	0.4	12	21 Su	0838	0.7	21
	1756	4.2	128		1823	4.0	122
7 Su	0915	0.3	9	22 M	0533	0.5	15
	1835	4.7	143		1858	4.2	128
8 M	0542	0.2	6	23 Tu	0551	0.2	6
	1921	5.1	155		1937	4.4	134
9 Tu	0551	-0.2	-6	24 W	0616	0.0	0
	2011	5.3	162		2020	4.5	137
10 W	0619	-0.5	-15	25 Th	0643	-0.2	-6
	2101	5.4	165		2058	4.6	140
11 Th	0655	-0.7	-21	26 F	0711	-0.3	-9
	2152	5.3	162		2140	4.6	140
12 F	0727	-0.7	-21	27 Sa	0733	-0.3	-9
	2241	5.0	152		2219	4.4	134
13 Sa	0756	-0.6	-18	28 Su	0748	-0.1	-3
	2327	4.6	140		2254	4.2	128
14 Su	0821	-0.4	-12	29 M	0752	0.0	0
					2336	3.8	116
15 M	0012	4.2	128	30 Tu	0750	0.3	9
	0843	-0.1	-3		1503	2.0	61
					1705	1.9	58
				31 W	0015	3.3	101
					0745	0.4	12
					1457	2.5	76
					1912	2.0	61

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0054	2.7	82	16 F	0223	1.9	58
	0747	0.5	15		0731	1.0	30
	1516	3.1	94		1530	3.4	104
	2118	1.8	55				
2 F	0139	2.1	64	17 Sa	0002	1.3	40
	0751	0.6	18		0309	1.5	46
	1548	3.7	113		0729	1.0	30
					1559	3.6	110
3 Sa	0002	1.3	40	18 Su	0148	1.0	30
	0221	1.4	43		0409	1.1	34
	0800	0.5	15		0725	1.0	30
	1625	4.2	128		1635	3.8	116
4 Su	0810	0.5	15	19 M	0310	0.7	21
	1710	4.6	140		1714	4.0	122
5 M	0354	0.3	9	20 Tu	0413	0.5	15
	0556	0.4	12		1759	4.1	125
	0807	0.3	9				
	1800	4.8	146				
6 Tu	0433	0.0	0	21 W	0453	0.3	9
	1857	4.9	149		1845	4.1	125
7 W	0513	-0.2	-6	22 Th	0526	0.2	6
	1953	4.9	149		1930	4.1	125
8 Th	0548	-0.2	-6	23 F	0554	0.2	6
	2048	4.8	146		2023	4.1	125
9 F	0620	-0.2	-6	24 Sa	0612	0.2	6
	2144	4.5	137		2111	4.0	122
10 Sa	0649	-0.1	-3	25 Su	0623	0.4	12
	2233	4.1	125		2201	3.7	113
11 Su	0714	0.1	3	26 M	0624	0.6	18
	2321	3.7	113		1242	1.8	55
					1512	1.7	52
					2252	3.3	101
12 M	0732	0.3	9	27 Tu	0612	0.8	24
	1407	2.1	64		1244	2.3	70
	1657	2.0	61		1717	1.6	49
					2348	2.9	88
13 Tu	0007	3.3	101	28 W	0611	0.9	27
	0740	0.6	18		1306	2.9	88
	1421	2.5	76		1858	1.4	43
	1859	2.0	61				
14 W	0049	2.8	85				
	0742	0.8	24				
	1440	2.8	85				
	2045	1.8	55				
15 Th	0134	2.3	70				
	0736	0.9	27				
	1502	3.1	94				
	2222	1.6	49				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0047	2.3	70	16 F	0216	1.7	52
	0615	1.0	30		0543	1.4	43
	1331	3.5	107		1345	3.5	107
	2030	1.1	34		2207	0.8	24
2 F	0146	1.8	55	17 Sa	0322	1.5	46
	0623	1.0	30		0544	1.4	43
	1408	4.0	122		1411	3.7	113
	2203	0.8	24		2309	0.7	21
3 Sa	0246	1.3	40	18 Su	1443	3.8	116
	0638	0.9	27				
	1448	4.4	134				
	2332	0.5	15				
4 Su	0401	1.0	30	19 M	0015	0.6	18
	0651	0.8	24		1518	3.9	119
	1537	4.6	140				
5 M	0059	0.3	9	20 Tu	0124	0.6	18
	1630	4.7	143		1558	3.9	119
6 Tu	0218	0.2	6	21 W	0223	0.5	15
	1729	4.6	140		1644	3.9	119
7 W	0318	0.1	3	22 Th	0316	0.5	15
	1831	4.4	134		1736	3.8	116
8 Th	0407	0.2	6	23 F	0348	0.5	15
	1931	4.1	125		1831	3.6	110
9 F	0446	0.3	9	24 Sa	0407	0.6	18
	2036	3.8	116		1933	3.3	101
10 Sa	0518	0.4	12	25 Su	0414	0.8	24
	2135	3.4	104		1043	1.9	58
					1245	1.8	55
					2044	3.0	91
11 Su	0543	0.6	18	26 M	0405	1.0	30
	1157	2.1	64		1037	2.3	70
	1550	1.9	58		1527	1.7	52
	2231	3.1	94		2155	2.6	79
12 M	0557	0.9	27	27 Tu	0400	1.2	37
	1215	2.5	76		1056	2.9	88
	1752	1.7	52		1718	1.3	40
	2330	2.7	82		2311	2.2	67
13 Tu	0606	1.1	34	28 W	0405	1.3	40
	1234	2.8	85		1123	3.5	107
	1913	1.5	46		1844	0.8	24
14 W	0025	2.3	70	29 Th	0020	1.8	55
	0600	1.3	40		0417	1.3	40
	1255	3.1	94		1156	4.0	122
	2012	1.2	37		1957	0.4	12
15 Th	0121	2.0	61	30 F	0135	1.5	46
	0548	1.4	43		0428	1.2	37
	1324	3.3	101		1238	4.5	137
	2108	1.0	30		2055	0.1	3
				31 Sa	0249	1.2	37
					0443	1.1	34
					1317	4.8	146
					2158	-0.1	-3

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

ST. MICHAEL, ALASKA, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 Su	1406	4.9	149	16 M	1335	4.1	125
	2304	-0.1	-3		2311	0.2	6
2 M	1457	4.8	146	17 Tu	1407	4.1	125
					2353	0.2	6
3 Tu	0006	-0.1	-3	18 W	1442	4.0	122
	1551	4.5	137				
4 W	0105	0.1	3	19 Th	0032	0.3	9
	1650	4.1	125		1518	3.8	116
5 Th	0154	0.2	6	20 F	0054	0.5	15
	1752	3.7	113		1600	3.4	104
6 F	0240	0.5	15	21 Sa	0105	0.6	18
	1901	3.2	98		1654	3.0	91
7 Sa	0312	0.7	21	22 Su	0113	0.8	24
	1001	2.3	70		0901	2.4	73
	1432	2.1	64		1234	2.1	64
	2017	2.7	82		1824	2.4	73
8 Su	0334	0.9	27	23 M	0124	1.0	30
	1015	2.7	82		0903	2.9	88
	1651	1.7	52		1609	1.7	52
	2130	2.3	70		2024	1.9	58
9 M	0345	1.2	37	24 Tu	0131	1.1	34
	1037	3.0	91		0927	3.5	107
	1804	1.3	40		1732	1.0	30
	2242	2.0	61		2213	1.5	46
10 Tu	0337	1.4	43	25 W	0139	1.2	37
	1106	3.3	101		0956	4.1	125
	1903	0.9	27		1827	0.4	12
11 W	0005	1.7	52	26 Th	1031	4.6	140
	0322	1.5	46		1919	-0.1	-3
	1127	3.6	110				
	1948	0.6	18				
12 Th	1150	3.8	116	27 F	1114	5.0	152
	2027	0.4	12		2012	-0.5	-15
13 F	1215	3.9	119	28 Sa	1158	5.2	158
	2106	0.3	9		2100	-0.6	-18
14 Sa	1239	4.0	122	29 Su	1244	5.2	158
	2148	0.2	6		2146	-0.6	-18
15 Su	1305	4.1	125	30 M	1332	5.0	152
	2229	0.2	6		2234	-0.5	-15

MAY

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 Tu	1423	4.7	143	16 W	1311	4.2	128
	2320	-0.3	-9		2251	0.0	0
2 W	1515	4.2	128	17 Th	1340	3.9	119
	2359	0.0	0		2302	0.1	3
3 Th	1604	3.5	107	18 F	1400	3.6	110
					2307	0.3	9
4 F	0031	0.3	9	19 Sa	1423	3.0	91
	0800	2.4*	73*		2313	0.5	15
	1657	2.9	88				
5 Sa	0053	0.6	18	20 Su	0737	2.7	82
	0829	2.8	85		1700	2.2*	67*
	1519	2.1	64		2321	0.6	18
	1812	2.2	67				
6 Su	0104	0.9	27	21 M	0745	3.3	101
	0851	3.2	98		2329	0.7	21
	1655	1.6	49				
	1949	1.7	52				
7 M	0057	1.1	34	22 Tu	0806	3.9	119
	0916	3.5	107		1759	0.8	24
	1754	1.0	30		2018	0.9	27
	2145	1.3	40		2328	0.7	21
8 Tu	0037	1.2	37	23 W	0839	4.5	137
	0945	3.8	116		1817	0.2	6
	1836	0.6	18				
9 W	1007	4.0	122	24 Th	0917	5.0	152
	1915	0.2	6		1849	-0.4	-12
10 Th	1033	4.2	128	25 F	0959	5.4	165
	1950	0.0	0		1928	-0.7	-21
11 F	1058	4.3	131	26 Sa	1046	5.6	171
	2025	-0.2	-6		2010	-0.9	-27
12 Sa	1123	4.4	134	27 Su	1134	5.5	168
	2100	-0.3	-9		2051	-0.9	-27
13 Su	1149	4.4	134	28 M	1221	5.3	162
	2136	-0.3	-9		2129	-0.8	-24
14 M	1218	4.4	134	29 Tu	1309	4.9	149
	2204	-0.2	-6		2203	-0.6	-18
15 Tu	1245	4.4	134	30 W	1354	4.3	131
	2229	-0.2	-6		2232	-0.3	-9
				31 Th	1433	3.7	113
					2254	0.0	0

JUNE

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
1 F	0600	2.5*	76*	16 Sa	1308	3.1	94
	1511	2.9	88		2149	0.3	9
	2305	0.3	9				
2 Sa	0705	3.0	91	17 Su	0612	2.9	88
	2310	0.6	18		1400	2.4*	73*
					2157	0.4	12
3 Su	0730	3.4	104	18 M	0624	3.5	107
	2303	0.7	21		2202	0.4	12
4 M	0757	3.8	116	19 Tu	0649	4.1	125
	2242	0.8	24		2203	0.4	12
5 Tu	0825	4.1	125	20 W	0721	4.7	143
	1809	0.5	15		1807	0.2	6
6 W	0854	4.3	131	21 Th	0804	5.1	155
	1837	0.1	3		1822	-0.3	-9
7 Th	0922	4.2	137	22 F	0850	5.5	168
	1913	-0.2	-6		1853	-0.7	-21
8 F	0955	4.6	140	23 Sa	0939	5.6	171
	1945	-0.4	-12		1925	-0.9	-27
9 Sa	1023	4.6	140	24 Su	1030	5.6	171
	2015	-0.5	-15		2001	-0.9	-27
10 Su	1052	4.6	140	25 M	1119	5.3	162
	2046	-0.5	-15		2031	-0.8	-24
11 M	1119	4.6	140	26 Tu	1205	4.9	149
	2112	-0.5	-15		2100	-0.6	-18
12 Tu	1147	4.5	137	27 W	1250	4.4	134
	2133	-0.4	-12		2119	-0.3	-9
13 W	1213	4.4	134	28 Th	1328	3.8	116
	2145	-0.3	-9		2136	-0.1	-3
14 Th	1234	4.1	125	29 F	0515	2.5	76
	2149	-0.1	-3		0750	2.4	73
					1400	3.1	94
					2148	0.2	6
15 F	1259	3.6	110	30 Sa	0533	3.0	91
	2146	0.1	3		1208	2.3	70
					1422	2.4	73
					2149	0.4	12

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

ST. MICHAEL, ALASKA, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Su	0601 2145	3.4 0.6	104 18	16 M	0452 2048	3.5 0.4	107 12
2 M	0629 2135	3.8 0.6	116 18	17 Tu	0524 2052	4.1 0.3	125 9
3 Tu	0701 2054	4.0 0.6	122 18	18 W	0601 2036	4.6 0.2	140 6
4 W	0733 1757	4.3 0.2	131 6	19 Th	0647 1738	5.0 -0.1	152 -3
5 Th	0809 1825	4.4 -0.1	134 -3	20 F	0740 1806	5.2 -0.4	158 -12
6 F	0846 1856	4.5 -0.3	137 -9	21 Sa	0832 1835	5.3 -0.6	162 -18
7 Sa	0921 1925	4.6 -0.4	140 -12	22 Su	0926 1903	5.3 -0.6	162 -18
8 Su	0956 1954	4.6 -0.4	140 -12	23 M	1018 1932	5.0 -0.5	152 -15
9 M	1028 2019	4.6 -0.4	140 -12	24 Tu	1107 1955	4.7 -0.3	143 -9
10 Tu	1100 2037	4.5 -0.3	137 -9	25 W	1152 2015	4.2 0.0	128 0
11 W	1129 2048	4.3 -0.2	131 -6	26 Th	1241 2028	3.6 0.2	110 6
12 Th	1157 2042	4.0 0.0	122 0	27 F	0327 0717 1323 2034	2.5 2.1 3.0 0.4	76 64 91 12
13 F	1223 2037	3.5 0.2	107 6	28 Sa	0351 0944 1405 2034	2.9 2.1 2.4 0.6	88 64 73 18
14 Sa	0438 0703 1248 2038	2.4 2.3 3.0 0.3	73 70 91 9	29 Su	0419 1221 1442 2030	3.3 1.7 1.8 0.7	101 52 55 21
15 Su	0433 0942 1242 2040	2.9 2.2 2.3 0.4	88 67 70 12	30 M	0451 2027	3.6 0.8	110 24
				31 Tu	0523 2019	3.8 0.7	116 21

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 W	0559 1645	4.0 0.5	122 15	16 Th	0523 1600	4.8 0.2	146 6
2 Th	0640 1721	4.2 0.3	128 9	17 F	0617 1644	4.9 0.0	149 0
3 F	0721 1755	4.3 0.1	131 3	18 Sa	0716 1717	4.8 -0.1	146 -3
4 Sa	0803 1826	4.3 0.0	131 0	19 Su	0818 1750	4.7 -0.1	143 -3
5 Su	0849 1854	4.3 -0.1	131 -3	20 M	0917 1815	4.4 0.0	134 0
6 M	0927 1913	4.3 -0.1	131 -3	21 Tu	1013 1837	4.1 0.2	125 6
7 Tu	1009 1931	4.2 0.0	128 0	22 W	1106 1855	3.6 0.5	110 15
8 W	1048 1935	3.9 0.2	119 6	23 Th	0117 0519 1157 1907	2.2 1.8 3.2 0.7	67 55 98 21
9 Th	1123 1927	3.6 0.4	110 12	24 F	0141 0707 1249 1910	2.6 1.7 2.7 0.9	79 52 82 27
10 F	0226 0502 1205 1921	2.1 2.0 3.2 0.6	64 61 98 18	25 Sa	0204 0836 1339 1907	3.0 1.5 2.2 1.1	91 46 67 34
11 Sa	0231 0657 1248 1920	2.5 1.9 2.6 0.7	76 58 79 21	26 Su	0231 1006 1431 1906	3.3 1.3 1.8 1.1	101 40 55 34
12 Su	0245 0851 1330 1923	3.1 1.7 2.0 0.7	94 52 61 21	27 M	0303 1125 1527 1907	3.5 1.1 1.4 1.1	107 34 43 34
13 M	0311 1101 1418 1931	3.6 1.4 1.5 0.7	110 43 46 21	28 Tu	0335 1254 1637 1857	3.7 0.9 1.1 1.0	113 27 34 30
14 Tu	0348 1942	4.1 0.6	125 18	29 W	0411 1410	3.8 0.7	116 21
15 W	0432 1508 1718 1939	4.5 0.4 0.5 0.4	137 12 15 12	30 Th	0450 1519	3.9 0.6	119 18
				31 F	0536 1614	3.9 0.4	119 12

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0625 1655	3.9 0.4	119 12	16 Su	0654 1605	4.1 0.3	125 9
2 Su	0717 1724	3.9 0.3	119 9	17 M	0759 1633	3.7 0.5	113 15
3 M	0806 1748	3.8 0.4	116 12	18 Tu	0905 1659 2313	3.3 0.7 2.3	101 21 70
4 Tu	0858 1800	3.6 0.6	110 18	19 W	0401 1014 1710 2338	1.8 2.9 1.0 2.7	55 88 30 82
5 W	0951 1754	3.4 0.8	104 24	20 Th	0553 1117 1719	1.5 2.5 1.2	46 76 37
6 Th	0015 0323 1040 1744	2.0 1.8 3.0 1.0	61 55 91 30	21 F	0003 0707 1220 1717	3.0 1.2 2.1 1.4	91 37 64 43
7 F	0021 0521 1140 1737	2.4 1.6 2.6 1.1	73 49 79 34	22 Sa	0027 0806 1321 1711	3.3 0.9 1.9 1.5	101 27 58 46
8 Sa	0036 0655 1237 1740	2.9 1.3 2.2 1.1	88 40 67 34	23 Su	0057 0854 1430 1706	3.6 0.7 1.6 1.5	110 21 49 46
9 Su	0101 0817 1333 1748	3.5 1.0 1.7 1.1	107 30 52 34	24 M	0121 0950	3.7 0.6	113 18
10 M	0133 0933 1443 1800	4.0 0.7 1.3 1.0	122 21 40 30	25 Tu	0147 1042	3.8 0.5	116 15
11 Tu	0213 1049 1557 1810	4.4 0.4 1.0 0.9	134 12 30 27	26 W	0219 1140	3.9 0.5	119 15
12 W	0259 1212	4.6 0.3	140 9	27 Th	0255 1240	3.9 0.5	119 15
13 Th	0349 1331	4.7 0.2	143 6	28 F	0335 1342	3.9 0.5	119 15
14 F	0446 1433	4.6 0.1	140 3	29 Sa	0417 1429	3.8 0.5	116 15
15 Sa	0548 1522	4.4 0.2	134 6	30 Su	0505 1507	3.6 0.6	110 18

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

ST. MICHAEL, ALASKA, 1990

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 M	0601	3.4	104	16 Tu	0219	2.1	64
	1525	0.7	21		0730	2.6	79
					1437	0.9	27
					2142	2.9	88
2 Tu	0707	3.0	91	17 W	0442	1.6	49
	1526	0.9	27		0903	2.1	64
	2219	2.1	64		1445	1.2	37
					2207	3.3	101
3 W	0103	2.0	61	18 Th	0557	1.2	37
	0821	2.7	82		1029	1.8	55
	1520	1.1	34		1440	1.4	43
	2216	2.5	76		2236	3.6	110
4 Th	0352	1.7	52	19 F	0650	0.7	21
	0942	2.3	70		1206	1.5	46
	1517	1.3	40		1425	1.4	43
	2236	3.0	91		2301	3.8	116
5 F	0539	1.3	40	20 Sa	0738	0.4	12
	1054	1.9	58		2329	4.0	122
	1520	1.3	40				
	2256	3.5	107				
6 Sa	0648	0.8	24	21 Su	0817	0.2	6
	1215	1.6	49		2354	4.1	125
	1528	1.3	40				
	2326	4.1	125				
7 Su	0743	0.3	9	22 M	0856	0.0	0
	1336	1.3	40				
	1536	1.2	37				
8 M	0005	4.5	137	23 Tu	0019	4.2	128
	0839	0.0	0		0935	0.0	0
9 Tu	0045	4.8	146	24 W	0048	4.2	128
	0935	-0.2	-6		1013	0.0	0
10 W	0132	5.0	152	25 Th	0119	4.2	128
	1033	-0.3	-9		1055	0.1	3
11 Th	0220	4.9	149	26 F	0146	4.1	125
	1128	-0.2	-6		1130	0.1	3
12 F	0314	4.6	140	27 Sa	0218	3.9	119
	1225	0.0	0		1202	0.3	9
13 Sa	0406	4.2	128	28 Su	0247	3.7	113
	1307	0.2	6		1220	0.4	12
14 Su	0509	3.7	113	29 M	0312	3.3	101
	1349	0.4	12		1224	0.6	18
15 M	0618	3.1	94	30 Tu	0351	2.8	85
	1418	0.7	21		1235	0.8	24
	2123	2.4	73		2045	2.5	76
				31 W	0101	2.2	67
					0318	2.3	70
					1240	0.9	27
					2045	3.0	91

NOVEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Th	0524	1.6	49	16 F	0630	0.4	12
	0733	1.7	52		2147	4.3	131
	1246	1.0	30				
	2107	3.6	110				
2 F	0556	1.0	30	17 Sa	0701	0.1	3
	0951	1.3	40		2215	4.4	134
	1247	1.1	34				
	2130	4.1	125				
3 Sa	0628	0.4	12	18 Su	0737	-0.2	-6
	2207	4.7	143		2244	4.5	137
4 Su	0713	-0.1	-3	19 M	0817	-0.3	-9
	2244	5.1	155		2313	4.5	137
5 M	0755	-0.5	-15	20 Tu	0847	-0.4	-12
	2329	5.3	162		2339	4.5	137
6 Tu	0841	-0.7	-21	21 W	0919	-0.4	-12
7 W	0014	5.4	165	22 Th	0004	4.4	134
	0926	-0.7	-21		0951	-0.3	-9
8 Th	0101	5.2	158	23 F	0029	4.3	131
	1010	-0.6	-18		1016	-0.2	-6
9 F	0153	4.9	149	24 Sa	0054	4.1	125
	1049	-0.4	-12		1031	-0.1	-3
10 Sa	0239	4.3	131	25 Su	0116	3.9	119
	1121	-0.2	-6		1039	0.1	3
11 Su	0327	3.7	113	26 M	0131	3.5	107
	1152	0.1	3		1043	0.3	9
12 M	0423	3.0	91	27 Tu	0139	3.0	91
	1212	0.4	12		1045	0.4	12
	1956	2.9	88		1923	2.8	85
13 Tu	0259	2.1	64	28 W	0400	2.3*	70*
	0515	2.2	67		1053	0.6	18
	1220	0.7	21		1924	3.3	101
	2021	3.3	101				
14 W	0445	1.5	46	29 Th	1055	0.6	18
	0705	1.6	49		1943	3.9	119
	1216	0.9	27				
	2049	3.7	113				
15 Th	0541	0.9	27	30 F	1049	0.6	18
	0910	1.2	37		2015	4.5	137
	1156	1.0	30				
	2118	4.0	122				

DECEMBER

Day	Time	Height ft	Height cm	Day	Time	Height ft	Height cm
	h m				h m		
1 Sa	0621	0.2	6	16 Su	0700	-0.2	-6
	2054	5.0	152		2141	4.6	140
2 Su	0643	-0.3	-9	17 M	0731	-0.4	-12
	2133	5.4	165		2213	4.6	140
3 M	0718	-0.7	-21	18 Tu	0803	-0.5	-15
	2218	5.6	171		2244	4.6	140
4 Tu	0757	-0.9	-27	19 W	0833	-0.5	-15
	2306	5.6	171		2311	4.6	140
5 W	0832	-1.0	-30	20 Th	0902	-0.5	-15
	2353	5.5	168		2341	4.4	134
6 Th	0907	-0.9	-27	21 F	0920	-0.4	-12
7 F	0042	5.1	155	22 Sa	0003	4.2	128
	0939	-0.6	-18		0931	-0.2	-6
8 Sa	0127	4.5	137	23 Su	0021	3.9	119
	1004	-0.4	-12		0929	0.0	0
9 Su	0207	3.8	116	24 M	0036	3.5	107
	1023	-0.1	-3		0929	0.1	3
	1810	2.5	76		1800	2.5*	76*
	2039	2.4	73				
10 M	0249	3.0	91	25 Tu	0042	3.0	91
	1037	0.2	6		0927	0.3	9
	1828	3.1	94		1749	2.9	88
11 Tu	1043	0.4	12	26 W	0200	2.4*	73*
	1900	3.5	107		0930	0.4	12
					1800	3.4	104
12 W	1041	0.6	18	27 Th	0934	0.4	12
	1932	3.9	119		1822	4.0	122
13 Th	1018	0.7	21	28 F	0935	0.4	12
	2000	4.2	128		1854	4.5	137
14 F	0546	0.4	12	29 Sa	0638	0.2	6
	2037	4.4	134		1936	5.0	152
15 Sa	0624	0.0	0	30 Su	0616	-0.2	-6
	2106	4.6	140		2022	5.4	165
				31 M	0641	-0.6	-18
					2112	5.6	171

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

HONOLULU, HAWAII, 1990

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0652	2.0	61	16 Tu	0058	0.6	18
	1411	0.1	3		0710	1.5	46
	2009	1.0	30		1416	0.1	3
					2112	1.2	37
2 Tu	0051	0.5	15	17 W	0216	0.8	24
	0730	1.8	55		0739	1.2	37
	1443	0.0	0		1448	0.2	6
	2122	1.2	37		2224	1.3	40
3 W	0219	0.7	21	18 Th	0419	0.9	27
	0809	1.5	46		0800	1.0	30
	1522	0.0	0		1521	0.2	6
	2238	1.5	46		2330	1.5	46
4 Th	0421	0.9	27	19 F	1607	0.2	6
	0858	1.2	37				
	1601	-0.1	-3				
	2346	1.8	55				
5 F	0636	0.8	24	20 Sa	0026	1.7	52
	1000	0.9	27		1656	0.1	3
	1647	-0.1	-3				
6 Sa	0042	2.0	61	21 Su	0113	1.9	58
	0815	0.6	18		0922	0.5	15
	1123	0.7	21		1159	0.6	18
	1736	-0.2	-6		1746	0.1	3
7 Su	0135	2.3	70	22 M	0153	2.0	61
	0915	0.4	12		0943	0.4	12
	1242	0.6	18		1308	0.6	18
	1826	-0.2	-6		1839	0.0	0
8 M	0222	2.5	76	23 Tu	0229	2.2	67
	0957	0.3	9		1002	0.3	9
	1351	0.6	18		1356	0.6	18
	1916	-0.2	-6		1921	-0.1	-3
9 Tu	0306	2.6	79	24 W	0303	2.3	70
	1036	0.2	6		1023	0.3	9
	1449	0.6	18		1441	0.7	21
	2012	-0.2	-6		2006	-0.1	-3
10 W	0347	2.6	79	25 Th	0337	2.3	70
	1111	0.1	3		1048	0.2	6
	1542	0.6	18		1523	0.7	21
	2057	-0.2	-6		2046	-0.1	-3
11 Th	0427	2.5	76	26 F	0408	2.3	70
	1146	0.1	3		1113	0.1	3
	1630	0.7	21		1605	0.8	24
	2139	-0.1	-3		2131	-0.1	-3
12 F	0503	2.4	73	27 Sa	0440	2.3	70
	1217	0.1	3		1139	0.1	3
	1719	0.8	24		1652	0.9	27
	2228	0.0	0		2213	0.0	0
13 Sa	0538	2.2	67	28 Su	0512	2.2	67
	1246	0.1	3		1206	0.0	0
	1808	0.9	27		1739	1.1	34
	2311	0.2	6		2301	0.1	3
14 Su	0610	2.0	61	29 M	0545	2.0	61
	1318	0.1	3		1236	0.0	0
	1903	1.0	30		1831	1.2	37
					2358	0.3	9
15 M	0002	0.4	12	30 Tu	0620	1.7	52
	0642	1.8	55		1307	0.0	0
	1347	0.1	3		1934	1.3	40
	2003	1.1	34				
				31 W	0106	0.5	15
					0651	1.4	43
					1341	-0.1	-3
					2043	1.5	46

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0240	0.7	21	16 F	0404	0.7	21
	0727	1.1	34		0654	0.8	24
	1419	-0.1	-3		1357	0.2	6
	2202	1.7	52		2224	1.5	46
2 F	0505	0.7	21	17 Sa	1451	0.2	6
	0805	0.8	24		2336	1.6	49
	1505	0.0	0				
	2321	1.9	58				
3 Sa	1607	0.0	0	18 Su	1602	0.2	6
4 Su	0026	2.1	64	19 M	0034	1.8	55
	0838	0.4	12		0849	0.4	12
	1138	0.5	15		1159	0.5	15
	1714	0.0	0		1715	0.2	6
5 M	0122	2.2	67	20 Tu	0118	1.9	58
	0910	0.3	9		0900	0.3	9
	1308	0.5	15		1301	0.6	18
	1819	-0.1	-3		1817	0.1	3
6 Tu	0209	2.3	70	21 W	0157	2.0	61
	0941	0.2	6		0916	0.2	6
	1406	0.6	18		1348	0.7	21
	1919	-0.1	-3		1909	0.0	0
7 W	0251	2.4	73	22 Th	0229	2.1	64
	1007	0.1	3		0937	0.2	6
	1456	0.7	21		1431	0.8	24
	2009	-0.1	-3		1954	-0.1	-3
8 Th	0327	2.3	70	23 F	0305	2.1	64
	1034	0.1	3		0955	0.1	3
	1539	0.9	27		1510	1.0	30
	2055	-0.1	-3		2043	-0.1	-3
9 F	0402	2.2	67	24 Sa	0337	2.1	64
	1057	0.0	0		1018	0.0	0
	1618	1.0	30		1549	1.2	37
	2141	0.0	0		2132	-0.1	-3
10 Sa	0431	2.1	64	25 Su	0409	2.0	61
	1121	0.0	0		1043	-0.1	-3
	1657	1.1	34		1635	1.3	40
	2223	0.1	3		2219	0.0	0
11 Su	0502	1.9	58	26 M	0441	1.8	55
	1144	0.0	0		1111	-0.1	-3
	1736	1.2	37		1721	1.5	46
	2308	0.2	6		2313	0.1	3
12 M	0531	1.7	52	27 Tu	0515	1.6	49
	1209	0.0	0		1137	-0.2	-6
	1818	1.3	40		1809	1.6	49
	2357	0.4	12				
13 Tu	0557	1.5	46	28 W	0014	0.3	9
	1232	0.1	3		0547	1.3	40
	1903	1.3	40		1209	-0.2	-6
					1905	1.7	52
14 W	0049	0.5	15				
	0622	1.2	37				
	1254	0.1	3				
	1955	1.4	43				
15 Th	0203	0.7	21				
	0643	1.0	30				
	1326	0.1	3				
	2101	1.4	43				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0133	0.5	15	16 F	0206	0.5	15
	0622	1.0	30		0604	0.7	21
	1242	-0.1	-3		1213	0.1	3
	2013	1.8	55		2005	1.5	46
2 F	0319	0.6	18	17 Sa	0406	0.5	15
	0704	0.7	21		0622	0.6	18
	1327	-0.1	-3		1245	0.1	3
	2130	1.8	55		2117	1.5	46
3 Sa	0554	0.4	12	18 Su	1336	0.2	6
	0803	0.5	15		2232	1.6	49
	1423	0.0	0				
	2251	1.9	58				
4 Su	0730	0.3	9	19 M	0728	0.3	9
	1030	0.4	12		1021	0.4	12
	1542	0.1	3		1506	0.2	6
					2337	1.7	52
5 M	0002	2.0	61	20 Tu	0736	0.3	9
	0805	0.2	6		1159	0.5	15
	1223	0.5	15		1639	0.2	6
	1708	0.1	3				
6 Tu	0100	2.0	61	21 W	0027	1.7	52
	0830	0.1	3		0755	0.2	6
	1325	0.6	18		1252	0.6	18
	1824	0.1	3		1751	0.2	6
7 W	0145	2.0	61	22 Th	0109	1.8	55
	0859	0.1	3		0816	0.1	3
	1410	0.8	24		1334	0.8	24
	1923	0.0	0		1854	0.1	3
8 Th	0227	2.0	61	23 F	0148	1.8	55
	0921	0.0	0		0834	0.0	0
	1449	1.0	30		1413	1.0	30
	2015	0.0	0		1949	0.0	0
9 F	0259	1.9	58	24 Sa	0222	1.8	55
	0942	0.0	0		0857	-0.1	-3
	1524	1.1	34		1452	1.3	40
	2100	0.0	0		2041	0.0	0
10 Sa	0329	1.8	55	25 Su	0257	1.7	52
	1001	0.0	0		0921	-0.2	-6
	1556	1.3	40		1531	1.5	46
	2143	0.1	3		2134	0.0	0
11 Su	0358	1.6	49	26 M	0336	1.5	46
	1023	-0.1	-3		0949	-0.3	-9
	1631	1.4	43		1616	1.7	52
	2226	0.1	3		2230	0.0	0
12 M	0426	1.4	43	27 Tu	0411	1.3	40
	1041	0.0	0		1016	-0.3	-9
	1703	1.5	46		1703	1.9	58
	2310	0.2	6		2331	0.1	3
13 Tu	0451	1.3	40	28 W	0450	1.1	34
	1101	0.0	0		1046	-0.3	-9
	1739	1.6	49		1753	2.0	61
	2356	0.3	9				
14 W	0520	1.1	34	29 Th	0040	0.2	6
	1123	0.0	0		0528	0.8	24
	1821	1.6	49		1121	-0.3	-9
					1846	2.0	61
15 Th	0053	0.4	12	30 F	0202	0.3	9
	0545	0.9	27		0614	0.6	18
	1148	0.0	0		1200	-0.2	-6
	1906	1.6	49		1950	2.0	61
				31 Sa	0342	0.3	9
					0717	0.4	12
					1246	-0.1	-3
					2101	1.9	58

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HONOLULU, HAWAII, 1990

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0525	0.2	6	16	0513	0.2	6
Su	0909	0.3	9	M	0821	0.3	9
	1353	0.1	3		1251	0.2	6
	2216	1.9	58		2128	1.6	49
2	0631	0.1	3	17	0551	0.2	6
M	1121	0.4	12	Tu	1032	0.4	12
	1527	0.2	6		1417	0.3	9
	2323	1.8	55		2227	1.6	49
3	0706	0.0	0	18	0620	0.1	3
Tu	1234	0.6	18	W	1145	0.6	18
	1706	0.3	9		1603	0.3	9
					2323	1.6	49
4	0022	1.7	52	19	0645	0.0	0
W	0738	0.0	0	Th	1234	0.8	24
	1323	0.8	24		1729	0.3	9
	1823	0.2	6				
5	0108	1.7	52	20	0010	1.5	46
Th	0802	-0.1	-3	F	0707	-0.1	-3
	1402	1.0	30		1314	1.0	30
	1927	0.2	6		1842	0.2	6
6	0146	1.6	49	21	0054	1.5	46
F	0825	-0.1	-3	Sa	0732	-0.2	-6
	1436	1.2	37		1353	1.3	40
	2016	0.2	6		1947	0.2	6
7	0218	1.4	43	22	0136	1.3	40
Sa	0843	-0.1	-3	Su	0757	-0.3	-9
	1507	1.4	43		1433	1.6	49
	2105	0.2	6		2047	0.1	3
8	0251	1.3	40	23	0218	1.2	37
Su	0902	-0.1	-3	M	0825	-0.4	-12
	1536	1.6	49		1518	1.9	58
	2149	0.2	6		2148	0.0	0
9	0319	1.1	34	24	0300	1.0	30
M	0922	-0.1	-3	Tu	0856	-0.4	-12
	1605	1.7	52		1601	2.1	64
	2232	0.2	6		2247	0.0	0
10	0347	1.0	30	25	0343	0.8	24
Tu	0941	-0.1	-3	W	0931	-0.4	-12
	1638	1.7	52		1646	2.2	67
	2317	0.2	6		2352	0.0	0
11	0419	0.8	24	26	0427	0.6	18
W	1005	-0.1	-3	Th	1007	-0.4	-12
	1713	1.8	55		1735	2.3	70
12	0006	0.2	6	27	0101	0.0	0
Th	0448	0.7	21	F	0516	0.5	15
	1027	-0.1	-3		1045	-0.3	-9
	1750	1.8	55		1830	2.2	67
13	0103	0.3	9	28	0216	0.1	3
F	0516	0.6	18	Sa	0622	0.4	12
	1055	0.0	0		1130	-0.2	-6
	1833	1.7	52		1928	2.1	64
14	0211	0.3	9	29	0332	0.0	0
Sa	0548	0.5	15	Su	0747	0.3	9
	1121	0.0	0		1225	0.0	0
	1926	1.7	52		2030	2.0	61
15	0343	0.3	9	30	0436	0.0	0
Su	0641	0.4	12	M	0937	0.4	12
	1158	0.1	3		1335	0.2	6
	2024	1.6	49		2133	1.8	55

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0528	-0.1	-3	16	0432	0.0	0
Tu	1120	0.6	18	W	1007	0.5	15
	1518	0.3	9		1351	0.3	9
	2234	1.6	49		2124	1.6	49
2	0606	-0.1	-3	17	0503	0.0	0
W	1218	0.8	24	Th	1116	0.7	21
	1657	0.4	12		1531	0.5	15
	2330	1.5	46		2215	1.5	46
3	0636	-0.1	-3	18	0531	-0.1	-3
Th	1304	1.0	30	F	1207	1.0	30
	1823	0.4	12		1714	0.5	15
					2206	1.3	40
4	0015	1.3	40	19	0602	-0.2	-6
F	0701	-0.1	-3	Sa	1250	1.3	40
	1343	1.3	40		1840	0.4	12
	1930	0.4	12		2357	1.1	34
5	0054	1.1	34	20	0631	-0.3	-9
Sa	0725	-0.2	-6	Su	1336	1.7	52
	1415	1.5	46		1955	0.3	9
	2027	0.3	9				
6	0133	1.0	30	21	0050	1.0	30
Su	0745	-0.2	-6	M	0703	-0.4	-12
	1443	1.6	49		1418	2.0	61
	2115	0.3	9		2104	0.2	6
7	0209	0.8	24	22	0140	0.8	24
M	0805	-0.2	-6	Tu	0739	-0.5	-15
	1515	1.8	55		1503	2.2	67
	2201	0.2	6		2206	0.1	3
8	0243	0.7	21	23	0231	0.6	18
Tu	0828	-0.2	-6	W	0817	-0.5	-15
	1547	1.9	58		1548	2.4	73
	2247	0.2	6		2305	0.0	0
9	0315	0.6	18	24	0323	0.5	15
W	0852	-0.2	-6	Th	0855	-0.5	-15
	1619	1.9	58		1636	2.5	76
	2335	0.2	6				
10	0350	0.5	15	25	0004	0.0	0
Th	0920	-0.2	-6	F	0419	0.4	12
	1654	2.0	61		0940	-0.4	-12
					1723	2.5	76
11	0021	0.2	6	26	0102	0.0	0
F	0422	0.5	15	Sa	0518	0.4	12
	0950	-0.2	-6		1026	-0.3	-9
	1732	2.0	61		1814	2.4	73
12	0110	0.2	6	27	0158	-0.1	-3
Sa	0505	0.4	12	Su	0627	0.4	12
	1019	-0.1	-3		1115	-0.1	-3
	1812	1.9	58		1904	2.2	67
13	0205	0.2	6	28	0251	-0.1	-3
Su	0556	0.4	12	M	0748	0.4	12
	1054	0.0	0		1210	0.1	3
	1857	1.9	58		1955	2.0	61
14	0301	0.1	3	29	0340	-0.1	-3
M	0705	0.3	9	Tu	0918	0.6	18
	1136	0.1	3		1323	0.3	9
	1943	1.8	55		2042	1.7	52
15	0353	0.1	3	30	0421	-0.1	-3
Tu	0833	0.4	12	W	1044	0.8	24
	1228	0.2	6		1452	0.5	15
	2033	1.7	52		2131	1.5	46
				31	0458	-0.1	-3
				Th	1146	1.0	30
					1638	0.6	18
					2223	1.2	37

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0530	-0.1	-3	16	0426	-0.1	-3
F	1239	1.3	40	Sa	1136	1.3	40
	1817	0.6	18		1714	0.7	21
	2309	1.0	30		2206	1.1	34
2	0557	-0.1	-3	17	0501	-0.2	-6
Sa	1317	1.5	46	Su	1228	1.7	52
	1938	0.6	18		1900	0.6	18
	2355	0.9	27		2305	0.9	27
3	0625	-0.1	-3	18	0538	-0.3	-9
Su	1351	1.7	52	M	1319	2.0	61
	2045	0.5	15		2023	0.4	12
4	0044	0.7	21	19	0011	0.7	21
M	0648	-0.1	-3	Tu	0619	-0.3	-9
	1423	1.8	55		1406	2.2	67
	2137	0.4	12		2129	0.3	9
5	0129	0.6	18	20	0117	0.6	18
Tu	0717	-0.2	-6	W	0705	-0.4	-12
	1459	2.0	61		1451	2.5	76
	2220	0.3	9		2221	0.1	3
6	0211	0.5	15	21	0215	0.5	15
W	0746	-0.2	-6	Th	0751	-0.4	-12
	1531	2.1	64		1539	2.6	79
	2258	0.2	6		2310	0.1	3
7	0253	0.5	15	22	0318	0.5	15
Th	0821	-0.2	-6	F	0839	-0.4	-12
	1603	2.1	64		1623	2.6	79
	2336	0.2	6		2355	0.0	0
8	0331	0.5	15	23	0417	0.5	15
F	0853	-0.2	-6	Sa	0928	-0.3	-9
	1639	2.1	64		1708	2.5	76
9	0015	0.2	6	24	0037	0.0	0
Sa	0413	0.4	12	Su	0514	0.5	15
	0928	-0.2	-6		1017	-0.2	-6
	1715	2.1	64		1750	2.4	73
10	0054	0.1	3	25	0116	0.0	0
Su	0502	0.4	12	M	0614	0.6	18
	1003	-0.1	-3		1109	0.0	0
	1751	2.1	64		1832	2.2	67
11	0133	0.1	3	26	0155	0.0	0
M	0555	0.5	15	Tu	0723	0.7	21
	1045	0.0	0		1205	0.2	6
	1827	2.0	61		1911	1.9	58
12	0211	0.1	3	27	0233	0.0	0
Tu	0655	0.5	15	W	0835	0.9	27
	1127	0.1	3		1307	0.5	15
	1905	1.9	58		1950	1.7	52
13	0243	0.0	0	28	0309	0.0	0
W	0809	0.6	18	Th	0948	1.0	30
	1223	0.3	9		1427	0.7	21
	1944	1.8	55		2028	1.4	43
14	0319	0.0	0	29	0344	0.0	0
Th	0923	0.8	24	F	1057	1.2	37
	1339	0.5	15		1619	0.8	24
	2025	1.6	49		2107	1.1	34
15	0351	-0.1	-3	30	0417	0.0	0
F	1033	1.0	30	Sa	1155	1.5	46
	1519	0.6	18		1625	0.8	24
	2110	1.4	43		2153	0.9	27

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HONOLULU, HAWAII, 1990

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0451	0.0	0	16	0408	-0.1	-3
Su	1245	1.6	49	M	1208	2.0	61
	2005	0.6	18		1942	0.6	18
	2248	0.7	21		2229	0.7	21
2	0527	0.0	0	17	0459	-0.1	-3
M	1327	1.8	55	Tu	1305	2.2	67
	2107	0.5	15		2052	0.5	15
	2357	0.6	18				
3	0603	0.0	0	18	0002	0.6	18
Tu	1406	2.0	61	W	0554	-0.2	-6
	2149	0.4	12		1353	2.4	73
					2137	0.3	9
4	0103	0.6	18	19	0121	0.6	18
W	0642	0.0	0	Th	0650	-0.2	-6
	1441	2.1	64		1441	2.6	79
	2218	0.4	12		2214	0.2	6
5	0153	0.5	15	20	0222	0.6	18
Th	0724	-0.1	-3	F	0745	-0.2	-6
	1513	2.2	67		1525	2.6	79
	2249	0.3	9		2248	0.1	3
6	0241	0.6	18	21	0318	0.7	21
F	0803	-0.1	-3	Sa	0834	-0.2	-6
	1547	2.3	70		1606	2.6	79
	2315	0.3	9		2322	0.1	3
7	0323	0.6	18	22	0407	0.8	24
Sa	0841	-0.1	-3	Su	0926	-0.1	-3
	1619	2.3	70		1645	2.5	76
	2343	0.2	6		2353	0.1	3
8	0403	0.6	18	23	0459	0.9	27
Su	0919	-0.1	-3	M	1015	0.0	0
	1651	2.3	70		1721	2.3	70
9	0012	0.2	6	24	0023	0.1	3
M	0449	0.7	21	Tu	0548	1.0	30
	1001	0.0	0		1101	0.2	6
	1723	2.2	67		1753	2.1	64
10	0040	0.1	3	25	0053	0.1	3
Tu	0538	0.8	24	W	0643	1.1	34
	1040	0.1	3		1153	0.4	12
	1757	2.1	64		1829	1.8	55
11	0109	0.1	3	26	0124	0.1	3
W	0633	0.9	27	Th	0739	1.2	37
	1129	0.3	9		1253	0.6	18
	1829	2.0	61		1857	1.5	46
12	0140	0.1	3	27	0152	0.2	6
Th	0733	1.0	30	F	0842	1.3	40
	1228	0.5	15		1410	0.8	24
	1901	1.7	52		1929	1.3	40
13	0212	0.0	0	28	0225	0.2	6
F	0845	1.2	37	Sa	0953	1.5	46
	1344	0.7	21		1603	0.9	27
	1939	1.5	46		1954	1.0	30
14	0248	0.0	0	29	0300	0.2	6
Sa	0954	1.4	43	Su	1103	1.6	49
	1529	0.8	24				
	2021	1.2	37				
15	0323	0.0	0	30	0343	0.2	6
Su	1106	1.7	52	M	1205	1.8	55
	1743	0.8	24				
	2110	0.9	27				
				31	0436	0.2	6
				Tu	1255	1.9	58
					2105	0.5	15
					2352	0.6	18

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0530	0.2	6	16	0031	0.7	21
W	1337	2.0	61	Th	0545	0.1	3
	2124	0.5	15		1339	2.4	73
					2111	0.3	9
2	0101	0.7	21	17	0137	0.8	24
Th	0623	0.2	6	F	0651	0.1	3
	1416	2.2	67		1424	2.5	76
	2149	0.4	12		2139	0.3	9
3	0148	0.7	21	18	0228	0.9	27
F	0711	0.1	3	Sa	0747	0.1	3
	1449	2.3	70		1503	2.5	76
	2209	0.4	12		2205	0.2	6
4	0231	0.8	24	19	0315	1.1	34
Sa	0753	0.0	0	Su	0839	0.1	3
	1520	2.3	70		1540	2.4	73
	2229	0.3	9		2230	0.2	6
5	0309	0.9	27	20	0354	1.2	37
Su	0835	0.0	0	M	0924	0.1	3
	1551	2.3	70		1614	2.2	67
	2251	0.3	9		2255	0.2	6
6	0351	1.0	30	21	0436	1.4	43
M	0915	0.1	3	Tu	1013	0.3	9
	1621	2.3	70		1643	2.0	61
	2316	0.2	6		2321	0.2	6
7	0433	1.1	34	22	0519	1.5	46
Tu	1000	0.1	3	W	1100	0.4	12
	1652	2.2	67		1715	1.8	55
	2340	0.2	6		2345	0.2	6
8	0516	1.2	37	23	0601	1.6	49
W	1045	0.3	9	Th	1150	0.5	15
	1724	2.0	61		1740	1.6	49
9	0006	0.1	3	24	0009	0.2	6
Th	0605	1.4	43	F	0647	1.6	49
	1138	0.4	12		1249	0.7	21
	1756	1.8	55		1811	1.3	40
10	0038	0.1	3	25	0033	0.3	9
F	0700	1.5	46	Sa	0739	1.7	52
	1241	0.6	18		1403	0.8	24
	1828	1.5	46		1833	1.1	34
11	0106	0.1	3	26	0102	0.3	9
Sa	0803	1.6	49	Su	0845	1.7	52
	1405	0.8	24		1601	0.8	24
	1903	1.3	40		1851	0.9	27
12	0142	0.1	3	27	0137	0.4	12
Su	0918	1.8	55	M	0957	1.7	52
	1611	0.9	27				
	1942	1.0	30				
13	0232	0.1	3	28	0230	0.4	12
M	1038	2.0	61	Tu	1112	1.8	55
	1842	0.7	21		2001	0.6	18
	2045	0.8	24		2221	0.7	21
14	0327	0.1	3	29	0347	0.5	15
Tu	1147	2.2	67	W	1215	1.9	58
	1958	0.5	15		2018	0.6	18
	2254	0.6	18				
15	0436	0.1	3	30	0003	0.7	21
W	1249	2.3	70	Th	0505	0.4	12
	2040	0.4	12		1300	2.0	61
					2038	0.5	15
				31	0058	0.8	24
				F	0602	0.3	9
					1337	2.1	64
					2054	0.5	15

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1	0137	0.9	27	16	0226	1.3	40
Sa	0659	0.3	9	Su	0752	0.3	9
	1412	2.2	67		1431	2.1	64
	2111	0.4	12		2112	0.2	6
2	0217	1.1	34	17	0301	1.5	46
Su	0745	0.2	6	M	0844	0.3	9
	1441	2.2	67		1506	2.0	61
	2131	0.3	9		2134	0.2	6
3	0253	1.3	40	18	0336	1.6	49
M	0830	0.2	6	Tu	0930	0.4	12
	1513	2.2	67		1535	1.8	55
	2151	0.2	6		2156	0.2	6
4	0332	1.4	43	19	0412	1.8	55
Tu	0913	0.2	6	W	1015	0.4	12
	1545	2.1	64		1605	1.6	49
	2213	0.2	6		2217	0.2	6
5	0412	1.6	49	20	0447	1.9	58
W	1002	0.3	9	Th	1102	0.5	15
	1617	1.9	58		1635	1.4	43
	2241	0.1	3		2237	0.2	6
6	0454	1.8	55	21	0526	1.9	58
Th	1053	0.4	12	F	1153	0.6	18
	1649	1.7	52		1700	1.3	40
	2307	0.1	3		2259	0.3	9
7	0542	1.9	58	22	0604	1.9	58
F	1153	0.5	15	Sa	1253	0.7	21
	1724	1.5	46		1732	1.1	34
	2336	0.1	3		2324	0.3	9
8	0635	2.0	61	23	0650	1.9	58
Sa	1304	0.6	18	Su	1403	0.7	21
	1759	1.2	37		1757	0.9	27
					2349	0.4	12
9	0011	0.1	3	24	0749	1.9	58
Su	0737	2.1	64	M	1603	0.7	21
	1440	0.7	21		1830	0.8	24
	1838	1.0	30				
10	0054	0.2	6	25	0025	0.5	15
M	0850	2.1	64	Tu	0856	1.8	55
	1657	0.7	21				
	1941	0.8	24				
11	0143	0.3	9	26	0114	0.5	15
Tu	1009	2.2	67	W	1011	1.9	58
	1839	0.6	18		1855	0.6	18
	2150	0.7	21		2251	0.7	21
12	0258	0.3	9	27	0253	0.6	18
W	1122	2.2	67	Th	1117	1.9	58
	1925	0.4	12		1913	0.5	15
	2349	0.7	21				
13	0431	0.4	12	28	0003	0.8	24
Th	1223	2.3	70	F	0429	0.6	18
	1959	0.3	9		1206	2.0	61
					1931	0.5	15
14	0058	0.9	27	29	0049	1.0	30
F	0551	0.4	12	Sa	0542	0.5	15
	1313	2.3	70		1248	2.0	61
	2026	0.3	9		1949	0.4	12
15	0147	1.1	34	30	0121	1.2	37
Sa	0659	0.3	9	Su	0640	0.5	15
	1356	2.2	67		1324	2.0	61
	2051	0.2	6		2010	0.3	9

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 M	0157	1.4	43	16 Tu	0251	1.8	55
	0733	0.4	12		0851	0.5	15
	1358	1.9	58		1427	1.5	46
	2030	0.2	6		2038	0.1	3
2 Tu	0235	1.6	49	17 W	0320	2.0	61
	0825	0.3	9		0939	0.5	15
	1430	1.8	55		1459	1.4	43
	2052	0.1	3		2058	0.1	3
3 W	0311	1.9	58	18 Th	0351	2.1	64
	0917	0.3	9		1025	0.5	15
	1506	1.7	52		1527	1.2	37
	2118	0.0	0		2120	0.1	3
4 Th	0353	2.1	64	19 F	0424	2.1	64
	1010	0.3	9		1111	0.5	15
	1544	1.5	46		1559	1.1	34
	2146	0.0	0		2142	0.1	3
5 F	0435	2.2	67	20 Sa	0457	2.2	67
	1107	0.4	12		1200	0.5	15
	1620	1.3	40		1631	0.9	27
	2215	0.0	0		2206	0.2	6
6 Sa	0524	2.3	70	21 Su	0535	2.1	64
	1213	0.5	15		1257	0.6	18
	1658	1.1	34		1703	0.8	24
	2250	0.0	0		2232	0.2	6
7 Su	0616	2.4	73	22 M	0617	2.1	64
	1334	0.5	15		1411	0.6	18
	1744	0.9	27		1745	0.7	21
	2326	0.1	3		2301	0.3	9
8 M	0715	2.3	70	23 Tu	0709	2.0	61
	1509	0.5	15		1533	0.5	15
	1846	0.7	21		1841	0.6	18
					2335	0.4	12
9 Tu	0012	0.2	6	24 W	0805	2.0	61
	0824	2.3	70		1645	0.5	15
	1648	0.5	15		2032	0.6	18
	2034	0.6	18				
10 W	0113	0.4	12	25 Th	0024	0.5	15
	0937	2.2	67		0905	1.9	58
	1754	0.4	12		1731	0.5	15
	2245	0.7	21		2235	0.7	21
11 Th	0246	0.5	15	26 F	0153	0.6	18
	1047	2.1	64		1004	1.9	58
	1836	0.3	9		1803	0.4	12
					2342	0.9	27
12 F	0007	0.9	27	27 Sa	0340	0.7	21
	0432	0.6	18		1057	1.8	55
	1146	2.1	64		1821	0.3	9
	1908	0.2	6				
13 Sa	0100	1.1	34	28 Su	0024	1.1	34
	0555	0.6	18		0513	0.7	21
	1234	2.0	61		1143	1.8	55
	1933	0.2	6		1844	0.2	6
14 Su	0140	1.4	43	29 M	0103	1.4	43
	0704	0.5	15		0626	0.6	18
	1316	1.8	55		1227	1.7	52
	1956	0.1	3		1906	0.1	3
15 M	0217	1.6	49	30 Tu	0138	1.7	52
	0801	0.5	15		0729	0.5	15
	1355	1.7	52		1309	1.6	49
	2019	0.1	3		1932	0.0	0
				31 W	0215	1.9	58
					0831	0.5	15
					1351	1.4	43
					1958	-0.1	-3

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Th	0254	2.2	67	16 F	0334	2.2	67
	0928	0.4	12		1040	0.5	15
	1430	1.2	37		1459	0.8	24
	2028	-0.1	-3		2035	0.0	0
2 F	0337	2.4	73	17 Sa	0406	2.3	70
	1027	0.3	9		1126	0.4	12
	1515	1.1	34		1531	0.8	24
	2101	-0.2	-6		2102	0.0	0
3 Sa	0422	2.6	79	18 Su	0441	2.3	70
	1127	0.3	9		1211	0.4	12
	1557	0.9	27		1612	0.7	21
	2137	-0.2	-6		2131	0.1	3
4 Su	0511	2.6	79	19 M	0516	2.3	70
	1231	0.3	9		1257	0.4	12
	1646	0.7	21		1648	0.7	21
	2215	-0.1	-3		2203	0.1	3
5 M	0602	2.6	79	20 Tu	0556	2.2	67
	1344	0.3	9		1349	0.4	12
	1745	0.6	18		1741	0.6	18
	2300	0.0	0		2236	0.2	6
6 Tu	0657	2.5	76	21 W	0637	2.1	64
	1500	0.3	9		1438	0.4	12
	1906	0.6	18		1845	0.6	18
	2350	0.2	6		2316	0.3	9
7 W	0756	2.3	70	22 Th	0720	2.0	61
	1606	0.3	9		1529	0.4	12
	2057	0.6	18		2008	0.6	18
8 Th	0054	0.4	12	23 F	0005	0.5	15
	0859	2.2	67		0805	1.9	58
	1654	0.2	6		1608	0.3	9
	2243	0.8	24		2143	0.8	24
9 F	0234	0.6	18	24 Sa	0118	0.6	18
	0958	2.0	61		0851	1.8	55
	1733	0.2	6		1637	0.2	6
	2355	1.1	34		2259	1.0	30
10 Sa	0424	0.7	21	25 Su	0257	0.8	24
	1056	1.8	55		0944	1.7	52
	1807	0.1	3		1706	0.2	6
					2352	1.2	37
11 Su	0047	1.3	40	26 M	0447	0.8	24
	0600	0.7	21		1035	1.5	46
	1145	1.6	49		1734	0.1	3
	1836	0.1	3				
12 M	0129	1.6	49	27 Tu	0034	1.5	46
	0717	0.7	21		0621	0.8	24
	1231	1.3	43		1125	1.3	40
	1900	0.1	3		1805	0.0	0
13 Tu	0202	1.8	55	28 W	0116	1.9	58
	0817	0.6	18		0738	0.6	18
	1313	1.2	37		1220	1.1	34
	1923	0.0	0		1836	-0.1	-3
14 W	0230	2.0	61	29 Th	0158	2.2	67
	0909	0.6	18		0846	0.5	15
	1348	1.1	34		1312	1.0	30
	1945	0.0	0		1912	-0.2	-6
15 Th	0302	2.1	64	30 F	0240	2.4	73
	0955	0.5	15		0945	0.4	12
	1423	0.9	27		1404	0.8	24
	2009	0.0	0		1951	-0.3	-9

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	cm		h m	ft	cm
1 Sa	0325	2.6	79	16 Su	0353	2.3	70
	1045	0.3	9		1124	0.3	9
	1457	0.7	21		1525	0.6	18
	2032	-0.3	-9		2043	0.0	0
2 Su	0411	2.7	82	17 M	0426	2.3	70
	1137	0.2	6		1158	0.3	9
	1549	0.6	18		1603	0.6	18
	2117	-0.3	-9		2118	0.0	0
3 M	0459	2.7	82	18 Tu	0500	2.3	70
	1233	0.2	6		1231	0.3	9
	1647	0.6	18		1649	0.6	18
	2202	-0.2	-6		2154	0.1	3
4 Tu	0545	2.7	82	19 W	0534	2.3	70
	1325	0.1	3		1306	0.3	9
	1753	0.6	18		1735	0.7	21
	2251	0.0	0		2229	0.1	3
5 W	0635	2.5	76	20 Th	0609	2.2	67
	1417	0.1	3		1342	0.2	6
	1907	0.6	18		1828	0.7	21
	2345	0.2	6		2311	0.3	9
6 Th	0724	2.3	70	21 F	0641	2.1	64
	1506	0.1	3		1413	0.2	6
	2034	0.8	24		1935	0.8	24
7 F	0051	0.5	15	22 Sa	0003	0.4	12
	0812	2.0	61		0717	1.9	58
	1548	0.1	3		1445	0.2	6
	2206	1.0	30		2047	0.9	27
8 Sa	0219	0.7	21	23 Su	0103	0.6	18
	0801	1.7	52		0752	1.7	52
	1627	0.1	3		1519	0.1	3
	2320	1.2	37		2200	1.1	34
9 Su	0408	0.8	24	24 M	0235	0.8	24
	0953	1.4	43		0831	1.5	46
	1704	0.1	3		1554	0.1	3
					2309	1.4	43
10 M	0019	1.5	46	25 Tu	0436	0.9	27
	0602	0.9	27		0923	1.2	37
	1042	1.2	37		1630	0.0	0
	1734	0.1	3				
11 Tu	0101	1.7	52	26 W	0005	1.7	52
	0733	0.8	24		0637	0.8	24
	1138	1.0	30		1025	1.0	30
	1805	0.0	0		1709	-0.1	-3
12 W	0141	1.9	58	27 Th	0054	2.0	61
	0842	0.6	18		0806	0.6	18
	1228	0.8	24		1138	0.8	24
	1834	0.0	0		1754	-0.2	-6
13 Th	0217	2.1	64	28 F	0145	2.3	70
	0935	0.5	15		0906	0.4	12
	1319	0.7	21		1247	0.7	21
	1903	0.0	0		1842	-0.3	-9
14 F	0249	2.2	67	29 Sa	0230	2.5	76
	1013	0.4	12		1001	0.3	9
	1404	0.7	21		1353	0.6	18
	1936	0.0	0		1927	-0.3	-9
15 Sa	0321	2.3	70	30 Su	0316	2.7	82
	1049	0.4	12		1043	0.2	6
	1443	0.7	21		1453	0.6	18
	2008	0.0	0		2020	-0.3	-9
				31 M	0400	2.7	82
					1125	0.1	3
					1550	0.6	18
					2108	-0.3	-9

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

TABLE 2.—TIDAL DIFFERENCES AND OTHER CONSTANTS

EXPLANATION OF TABLE

The publication of full daily predictions is necessarily limited to a comparatively small number of stations. Tide predictions for many other places, however, can be obtained by applying certain differences to the predictions for the reference stations in table 1. The following pages list the places called "subordinate stations" for which such predictions can be made and the differences or ratios to be used. These differences or ratios are to be applied to the predictions for the proper reference station which is listed in table 2 in bold face type above the differences for the subordinate station. The stations in this table are arranged in geographical order. The index at the end of this volume will assist in locating a particular station.

Caution.—The time and height differences listed in table 2 are average differences derived from comparisons of simultaneous tide observations at the subordinate location and its reference station. Because these figures are constant, they cannot provide for the daily variances of the actual tide. Therefore, it must be realized that although the application of the time and height differences will generally provide reasonably accurate approximations, they cannot result in as accurate predictions as those for the reference stations which are based upon much longer periods of analyses and which do provide for daily variances. In addition, at subordinate stations where the tide is chiefly diurnal, the tide correctors are intended primarily to be used to approximate the times and heights of the higher high and the lower low waters. When the lower high water and higher low water at the reference station are nearly the same height, great reliance should not be placed on the calculated corresponding tides at the subordinate station.

Time difference.—To determine the time of high water or low water at any station listed in this table there is given in the columns headed "Difference Time" the hours and minutes to be added to or subtracted from the time of high or low water at some reference station. A plus (+) sign indicates that the tide at the subordinate station is later than at the reference station and the difference should be added, a minus (−) sign that it is earlier and should be subtracted.

To obtain the tide at a subordinate station on any date apply the difference to the tide at the reference station for that same date. In some cases, however, to obtain an a. m. tide it may be necessary to use the preceding day's p.m. tide at the reference station, or to obtain a p.m. tide it may be necessary to use the following day's a. m. tide. For example, if a high water occurs at a reference station at 2200 on July 2, and the tide at the subordinate station occurs 3 hours later, then high water will occur at 0100 on July 3 at the subordinate station. For the second case, if a high water at a reference station occurs at 0200 on July 17, and the tide at the subordinate station occurs 5 hours earlier, the high water at the subordinate station will occur at 2100 on July 16. The necessary allowance for change in date when the international data line is crossed is included in the time differences. In such cases use the same date at the reference station as desired for the subordinate station as explained above.

The results obtained by the application of the time differences will be in the kind of time indicated by the time meridian shown above the name of the subordinate station. Summer or daylight saving time is not used in the tide tables.

Height differences.—The height of the tide, referred to the datum of charts, is obtained by means of the height differences or ratios. A plus (+) sign indicates that the difference should be added to the height at the reference station and a minus (−) sign that it should be subtracted. All height differences, ranges, and levels in table 2 are in feet but may be converted to meters by the use of table 7.

Ratio.—For some stations height differences would give unsatisfactory predictions. In such cases they have been omitted and one or two ratios are given. Where two ratios are given, one in the "height of high water" column and one in the "height of low water" column, the high waters and low waters at the reference station should be multiplied by these respective ratios. Where only one is given, the omitted ratio is either unreliable or unknown.

For some subordinate stations there is given in parentheses a ratio as well as a correction in feet. In those instances, each predicted high and low water at the reference station should first be multiplied by the ratio and then the correction in feet is to be added to or subtracted from each product as indicated.

As an example, at Treadwell Bay the values in the time and height difference columns in table 2 are given as +0 34, +0 46, and (*0.48 + 2.8) as referred to the reference station at Ketchikan, Alaska. If we assume that the tide predictions in column (1) below are those of Ketchikan on a particular day, application of the time and height corrections in columns (2) and (3) would result in the tide predictions for Treadwell Bay in column (4).

(1)		(2)	(3)	(4)		
Time h.m.	*Height* ft	*Time Corrections*	*Height Corrections*	*Time* h.m.	*Height* ft	*Height* meters
0313	3.8	+0 46	X0.48 + 2.8	0359	4.6	1.4
0921	15.2	+0 34	X0.48 + 2.8	0955	10.1	3.1
1601	−0.4	+0 46	X0.48 + 2.8	1647	2.6	0.8
2230	14.1	+0 34	X0.48 + 2.8	2304	9.6	2.9

Range.—The *mean range* is the difference in height between mean high water and mean low water. The *spring range* is the average semidiurnal range occurring semimonthly as the result of the Moon being new or full. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. Where the tide is chiefly of the diurnal type the table gives the *diurnal range*, which is the difference in height between mean higher high water and mean lower low water.

Datum.—The datum of the predictions obtained through the height differences or ratios is also the datum of the largest scale chart for the locality. To obtain the depth at the time of high or low water, the predicted height should be added to the depth on the chart unless such height is negative (−), when it should be subtracted. To find the height at times between high and low water see table 3. On some charts the depths are given in meters and in such cases the heights of the tide can be reduced to meters by the use of table 7. Chart datums for the portion of the world covered by these tables are approximately as follows: *Mean lower low water* for the Pacific coast of the United States, Alaska and the Hawaiian Islands; *mean low water springs* for Central America and Mexico. For the rest of the area covered by these tables the datums generally used are approximately *mean low water springs*, *Indian spring low water*, or the *lowest possible low water*.

Mean Tide Level (Half-Tide Level).—The mean tide level is a plane midway between mean low water and mean high water. Tabular values are reckoned from chart datum.

NOTE.—Dashes are entered in the place of data which are unknown, unreliable, or not applicable.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time: High water	DIFFERENCES Time: Low water	DIFFERENCES Height: High water	DIFFERENCES Height: Low water	RANGES Mean	RANGES Spring	Mean Tide Level
		° ′	° ′	h. m.	h. m.	ft	ft	ft	ft	ft
		S	W	on CABO de HORNOS, p.4						
	ARGENTINA, Tierra del Fuego <1> Time meridian, 60°W									
1	Bahia Buen Suceso	54 49	65 13	+0 55	+0 54	+0.9	+0.3	4.8	5.8	5.0
3	Bahia Aguirre	54 55	65 58	+0 28	+0 28	-0.9	-0.4	3.7	4.5	3.7
5	Bahia Ushuaia, Beagle Channel	54 49	68 13	+0 08	+0 02	-0.9	-0.6	3.9	4.4	3.6
	CHILE, Magellan Strait			on PUERTO MONTT, p.12						
7	Dungeness	52 24	68 26	-5 05	-5 05	*1.56	*0.94	23.8	29.8	16.8
9	Punta Catalina	52 32	68 46	-4 58	-4 58	*1.53	*1.04	22.8	28.5	16.8
11	Bahia Posesion	52 16	69 10	-4 31	-4 33	*1.83	*1.19	27.5	33.4	19.9
13	Banco Direccion	52 24	69 26	-4 21	-4 21	*1.90	*1.35	28.0	34.0	21.0
15	Bahia Santiago	52 31	69 52	-3 49	-3 45	-0.8	-1.6	14.0	17.8	10.6
17	Bahia Felipe	52 57	69 47	-3 48	-3 44	-2.9	-1.7	12.0	15.1	9.5
19	Segunda Angostura	52 45	70 18	-3 11	-3 03	+2.4	-0.4	16.0	20.3	12.8
				on PUNTA ARENAS, p.8						
21	Puerto Zenteno	52 47	70 46	-1 45	-1 45	+0.7	0.0	4.5	5.8	4.4
23	Bahia Gente Grande	53 03	70 16	-0 04	-0 22	+2.3	-0.2	6.3	7.4	5.0
25	PUNTA ARENAS	53 09	70 54			Daily predictions		3.8	4.9	4.0
27	Puerto del Hambre	53 38	70 55	+0 15	+0 10	0.0	0.0	3.6	4.7	3.9
29	Puerto San Antonio	53 54	70 54	+0 15	+0 15	+0.5	+0.5	3.8	5.0	4.5
31	Bahia Snug	53 51	71 25	+1 25	+1 25	+1.4	+0.9	4.3	5.6	5.2
33	Bahia Wood	53 49	71 38	+1 20	+1 20	+1.4	+0.9	4.3	5.6	5.2
35	Puerto Gallant	53 42	72 00	+1 20	+1 20	+1.4	+0.9	4.3	5.6	5.2
				on CABO de HORNOS, p.4						
37	Bahia Borja	53 32	72 30	-2 00	-2 00	-1.8	-2.1	4.5	5.0	2.4
39	Bahia Swallow	53 30	72 47	-1 55	-1 55	-1.8	-2.1	4.5	5.0	2.4
41	Caleta Playa Parda	53 19	73 01	-2 05	-2 05	-2.8	-2.1	3.5	4.0	1.9
43	Puerto Angosto	53 14	73 22	-2 30	-2 30	-2.7	-2.1	3.6	4.0	2.0
45	Caleta Sylvia	52 58	73 33	-2 11	-2 12	-2.4	-2.0	3.8	4.3	2.2
47	Puerto Tamar	52 56	73 46	-1 30	-1 30	-0.8	-0.7	4.1	4.6	3.7
49	Islote Pollo, Canal Smyth	52 23	73 41	-2 06	-2 06	-1.7	-0.9	3.4	4.3	3.1
51	Punta Ancud, Canal Smyth	52 43	73 49	-1 38	-1 36	-1.7	-0.9	3.4	4.1	3.1
53	Bahia Tuesday	52 51	74 27	-2 23	-2 24	-0.9	-0.7	4.0	4.5	3.6
55	Cabo Pilar	52 43	74 42	-2 34	-2 34	-2.7	-2.1	3.5	4.0	2.0
	CHILE, Coast									
57	Paso Goree, Bahia Nassau	55 19	67 14	+0 13	+0 13	+1.2	-0.6	6.0	6.7	4.7
59	Caleta Saint Martin, Isla Hermite	55 51	67 34	+0 08	-0 03	+0.6	+0.4	4.4	5.0	4.9
61	CABO de HORNOS	55 31	68 05			Daily predictions		4.2	4.8	4.4
63	Isla Diego Ramirez	56 28	68 43	+0 19	+0 19	-0.8	-1.1	4.5	5.0	3.4
65	Bahia India, Seno Año Nuevo	55 30	69 06	+0 30	+0 30	+0.4	+0.1	4.5	5.0	4.6
67	Isla Noir	54 29	73 00	-0 53	-0 53	-2.0	-2.1	4.3	4.9	2.3
69	Islas Week	53 12	74 21	-1 17	-1 17	-2.0	-2.0	4.2	4.7	2.4
71	Evangelistas	52 24	75 06	-2 09	-2 09	-1.8	-1.5	3.9	4.4	2.7
73	Angostura Guia	50 45	74 24	-2 25	-2 25	- -	- -	- -	7.9	- -
75	Puerto Henry, Golfo Trinidad	50 00	75 20	-3 05	-3 05	-1.8	-2.1	4.5	5.0	2.4
77	Angostura Inglesa	48 59	74 24	-2 50	-2 50	-0.9	-2.0	5.3	6.0	2.9
79	Puerto Barbara, Canal Fallos	48 02	75 24	-2 48	-2 46	-0.9	-2.0	5.3	6.0	2.9
81	Puerto Barroso, Golfo de Penas	46 49	75 17	-3 50	-3 50	-0.9	-2.0	5.3	6.0	2.9
83	Puerto Slight, Golfo Tres Montes	46 49	75 33	-3 31	-3 31	*0.63	*0.57	2.8	3.3	2.2
85	Caleta Pascuas, Bahia San Andres	46 36	75 31	-2 15	-2 15	-2.0	-2.1	4.3	4.8	2.3
87	Puerto Refugio	45 52	74 47	-2 20	-2 20	-1.9	-2.0	4.3	4.9	2.4
89	Puerto Yates	45 26	74 26	-2 30	-2 30	+2.4	+0.3	6.3	8.0	5.7
91	Rada Vallenar	45 19	74 32	-2 50	-2 50	-1.1	-1.7	4.8	6.0	3.0
93	Puerto Italiano, Canal Darwin	45 22	74 08	-2 50	-2 50	-0.9	-1.7	5.0	6.2	3.1
95	Puerto Lagunas	45 17	73 46	-2 00	-2 00	-0.2	-1.6	5.6	7.1	3.5
97	Puerto Americano	45 03	73 45	-1 45	-1 45	-0.7	-1.7	5.2	6.5	3.2
99	Isla Guamblin	44 49	75 02	-3 45	-3 45	+0.5	-1.7	6.4	7.7	3.8
101	Isla Guafo	43 37	74 36	-4 00	-4 00	+0.2	-1.5	5.9	7.5	3.8
	Golfo de Corcovado									
103	Puerto Low	43 49	74 01	-2 55	-2 55	+0.6	-1.6	6.4	7.9	3.9
105	Puerto Melinka	43 54	73 45	-3 20	-3 20	+0.9	-1.6	6.7	8.2	4.0
107	Bahia Tictoc	43 37	72 56	-3 00	-3 00	+1.4	-0.9	7.0	8.6	4.9
109	Puerto San Pedro	43 20	73 42	-2 20	-2 20	+1.7	-1.3	7.2	8.8	4.6
				on PUERTO MONTT, p.12						
111	Puerto Quellon	43 07	73 38	+0 15	+0 15	-4.0	-3.3	12.5	15.7	8.2
113	Puerto Quetlen	42 54	73 29	+0 30	+0 30	-3.7	-3.5	13.0	16.4	8.2
115	Castro	42 29	73 46	-0 05	-0 05	-1.9	-3.3	14.6	18.4	9.2
	Golfo de Ancud									
117	Puerto Quemchi	42 09	73 29	+0 15	+0 15	+1.1	-1.5	15.8	19.7	11.6
119	Bahia Linao	41 56	73 33	+0 20	+0 20	-3.4	-3.2	13.0	16.9	8.5
121	Paso Lagartija	41 50	73 19	+0 20	+0 20	-3.9	-3.2	12.5	16.5	8.9

Endnotes can be found at the end of table 2.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Spring	Mean Tide Level
		° ′ S	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	CHILE, Coast Time meridian, 60°W				on PUERTO MONTT, p.12					
	Golfo de Ancud									
123	Paso Tautil									
125	PUERTO MONTT, Seno Reloncavi	41 44	73 04	+0 05	+0 05	-0.8	-0.6	13.0	17.7	11.1
127	Roca Remalinos, Canal Chacao	41 29	72 58		Daily predictions			13.2	18.0	11.8
		41 48	73 32	+0 25	+0 25	-3.9	-3.2	12.5	16.9	8.3
					on VALPARAISO, p.16					
129	Ancud	41 52	73 50	+2 00	+1 59	+1.4	-0.2	4.6	6.0	3.6
131	Carelmapu, Canal Chacao	41 45	73 42	+3 12	+3 10	*1.93	*1.20	6.9	8.8	5.3
133	Maullin, Rio Maullin	41 37	73 36	+3 15	+3 15	+2.5	-0.6	6.1	7.9	3.9
135	Corral, Bahia Corral	39 52	73 26	+0 56	+0 55	+1.4	+1.2	3.2	4.0	4.3
137	Valdivia, Rio Valdivia	39 49	73 15	+1 55	+1 55	-1.0	-1.0	3.0	3.9	2.0
139	Queule	39 23	73 14	+0 45	+0 45	-0.2	-1.0	3.8	4.9	2.4
141	Rio Imperial entrance	38 48	73 23	+0 30	+0 30	-0.2	-1.0	3.8	4.9	2.4
143	Caleta La Hacienda, Isla Mocha	38 20	73 56	+0 25	+0 25	+0.1	-0.9	4.0	5.2	2.6
145	Puerto Lebu	37 37	73 41	+0 40	-0 40	+0.1	-0.7	3.8	4.4	2.7
147	Puerto Yana	37 22	73 40	+0 35	+0 35	-0.2	-1.0	3.8	4.9	2.4
149	Isla Santa Maria	36 59	73 32	+0 30	+0 30	+1.0	-0.8	4.8	6.2	3.1
151	Bahia Lota, Bahia Arauco	37 06	73 10	+0 20	+0 20	-0.2	-1.0	3.8	4.9	2.4
153	Talcahuano, Bahia Concepcion	36 42	73 06	+0 24	+0 23	+0.1	-0.1	3.2	4.3	3.0
155	Bahia Coliumo	36 32	72 58	+0 30	+0 30	-0.2	-1.0	3.8	4.9	2.4
157	Buchupureo	36 04	72 47	+0 30	+0 30	*0.42	*0.13	1.7	2.1	1.0
159	Curanipe	35 49	72 36	+0 50	+0 50	-1.0	-1.0	3.0	3.9	2.0
161	Constitucion, Rio Maule entrance	35 19	72 24	+0 25	+0 25	-0.2	-1.0	3.8	4.9	2.4
163	Llico	34 45	72 07	+0 15	+0 15	-0.2	-1.0	3.8	4.9	2.4
165	Rada Pichilemu	34 23	71 59	+0 10	+0 10	-0.1	-1.0	3.9	5.0	2.4
167	Rada Topocalma	34 07	72 00	+0 05	+0 05	+0.4	-0.4	3.8	4.9	3.0
169	San Antonio	33 35	71 38	-0 05	-0 05	-0.1	-1.0	3.9	5.0	2.4
171	Algarrobo	33 21	71 41	0 00	0 00	0.0	0.0	3.0	3.9	3.0
173	Rada Quintay	33 11	71 42	-0 05	-0 05	-0.1	-1.0	3.9	5.0	2.4
175	VALPARAISO	33 02	71 38		Daily predictions			3.0	3.9	3.0
177	Quintero	32 46	71 32	-0 05	-0 05	+1.5	+0.7	3.8	4.9	4.1
179	Zapallar	32 32	71 29	-0 25	-0 25	-0.2	-1.0	3.8	4.9	2.4
181	Papudo	32 30	71 28	-0 25	-0 25	-0.2	-1.0	3.8	4.9	2.4
183	Pichidangui	32 09	71 33	-0 30	-0 30	-0.2	-1.0	3.8	4.9	2.4
185	Los Vilos	31 54	71 32	-0 20	-0 20	+1.0	+0.4	3.6	4.6	3.7
187	Caleta Oscuro	31 25	71 37	-0 25	-0 25	-0.3	-0.9	3.6	4.6	2.4
189	Bahia Tongoy	30 15	71 31	-0 40	-0 40	-0.2	-1.0	3.8	4.9	2.4
191	Coquimbo	29 58	71 20	-0 21	-0 23	-0.2	-0.1	2.9	3.8	2.9
193	Caleta Totoralillo	29 29	71 20	-0 50	-0 50	-0.2	-1.0	3.8	4.9	2.4
					on ANTOFAGASTA, p.20					
195	Huasco	28 28	71 14	+0 19	+0 18	-0.3	-0.4	2.7	3.5	2.3
197	Carrizal Bajo	28 04	71 11	0 00	-0 01	*0.77	*0.54	2.3	2.9	1.9
199	Caleta Barranquillas	27 31	70 56	0 00	0 00	*0.90	*0.92	2.3	2.9	1.9
201	Caldera	27 04	70 50	+0 17	+0 16	+0.5	+0.3	2.3	2.4	2.4
203	Puerto Flamenco	26 34	70 44	+0 10	+0 09	+0.1	0.0	2.8	3.6	3.0
205	Chanaral de las Animas	26 21	70 38	+0 22	+0 23	+0.1	+0.1	2.7	3.5	2.7
207	Taltal	25 25	70 29	+0 15	+0 15	0.0	0.0	2.6	3.4	2.7
209	Paposo	25 02	70 28	+0 15	+0 15	0.0	0.0	2.6	3.4	2.6
211	Blanco Encalada	24 22	70 32	+0 10	+0 10	+0.1	0.0	2.7	3.5	2.7
213	ANTOFAGASTA	23 39	70 25		Daily predictions			2.6	3.4	2.6
215	Mejillones del Sur	23 06	70 28	0 00	0 00	+0.3	-0.7	3.6	4.7	2.4
217	Cobija	22 34	70 18	-0 05	-0 05	-0.4	-0.8	3.0	3.9	2.0
219	Tocopilla	22 06	70 14	-0 05	-0 05	+0.1	-0.3	3.0	3.9	2.5
221	Caleta Lobos	21 05	70 11	-0 25	-0 25	+0.4	+0.1	2.9	3.8	2.9
223	Iquique	20 12	70 10	-0 22	-0 15	+0.3	+0.5	2.4	3.1	3.0
225	Caleta Junin	19 40	70 12	-0 31	-0 13	-0.3	-0.1	2.4	3.1	2.4
227	Pisagua	19 35	70 14	-0 20	-0 20	+0.7	+0.3	3.0	3.9	3.1
229	Arica	18 28	70 20	-0 18	-0 19	*0.97	*1.08	2.4	3.1	2.6
	PERU Time meridian, 75°W				on MATARANI, p.24					
231	Ilo	17 38	71 21	+0 07	-0 02	+0.2	0.0	2.3	2.9	1.5
233	MATARANI	17 00	72 07		Daily predictions			2.1	2.7	1.4
235	Puerto San Juan	15 21	75 09	-0 34	-0 37	-0.3	0.0	1.8	2.4	1.2
					on CALLAO, p.28					
237	Pisco	13 43	76 14	+0 36	+0 29	-0.4	-0.5	1.9	2.5	1.3
239	CALLAO	12 03	77 09		Daily predictions			1.8	2.4	1.7
241	Huacho	11 07	77 37	-0 24	-0 31	-0.3	0.5	2.0	2.6	1.3
243	Bahia Huarmey	10 06	78 10	-0 46	-0 55	0.0	-0.4	2.2	2.9	1.5
245	Chimbote	9 05	78 38	-0 58	-1 05	+0.7	+0.2	2.3	3.1	2.2
247	Puerto Chicama	7 42	79 27	-1 21	-1 33	+0.5	-0.4	2.7	3.5	1.7
249	Punta Eten	6 57	79 52	-1 29	-1 41	+0.8	-0.4	3.0	3.9	1.9

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time: High water	DIFFERENCES Time: Low water	DIFFERENCES Height: High water	DIFFERENCES Height: Low water	RANGES Mean	RANGES Spring	Mean Tide Level
				h. m.	h. m.	ft	ft	ft	ft	ft
		S	W							
	PERU Time meridian, 75°W				on TALARA, p.32					
251	Bayovar	5 50	81 03	+0 21	+0 17	-0.6	-0.1	3.5	4.5	2.2
253	Paita	5 05	81 07	+0 12	+0 08	-0.3	-0.1	3.8	4.9	2.4
255	TALARA	4 35	81 17			Daily predictions		4.0	5.2	2.6
257	Caleta Lobitos	4 27	81 17	+0 02	-0 02	+0.1	0.0	4.1	5.3	2.6
259	Zorritos	3 40	80 40	+0 35	+0 51	+0.8	+0.1	4.7	6.0	3.0
	ECUADOR									
261	Puerto Bolivar	3 16	80 01	+0 57	+0 37	*1.80	*1.67	7.3	9.4	4.7
263	Puna	2 44	79 55	+1 33	+1 43	*2.37	*2.33	9.5	12.3	6.2
					on GUAYAQUIL, p.36					
265	GUAYAQUIL	2 12	79 52		Daily predictions			10.8	12.1	6.0
					on TALARA, p.32					
267	La Libertad, Bahia de Santa Elena	2 13	80 55	-0 04	-0 05	+1.6	+0.2	5.4	7.0	3.5
269	Puerto de Cayo	1 21	80 45	-0 15	-0 15	+2.3	+0.3	6.0	7.7	3.9
271	Bahia Manta	0 57	80 44	-0 20	-0 17	+2.5	+0.2	6.3	8.0	4.0
					on BUENAVENTURA, p.40					
273	Rio Chone	0 35	80 26	-0 07	+0 17	*0.66	*0.69	6.8	8.6	4.3
275	Cabo Pasado	0 21	80 31	-0 11	+0 10	*0.63	*0.62	6.6	8.2	4.1
		N	W							
277	Rio Santiago	1 13	79 07	-0 08	-0 16	*0.77	*0.77	8.0	10.0	5.0
279	San Lorenzo	1 15	78 50	+0 02	+0 15	*0.85	*0.77	8.9	11.0	5.5
					on SALINA CRUZ, p.56					
	Galapagos Islands	S	W							
281	Isla San Cristobal	0 54	89 37	+1 12	+1 14	+0.9	-0.3	4.8	6.1	3.1
283	Isla Santa Maria	1 14	90 27	+1 10	+1 07	0.0	-0.4	4.0	5.0	2.5
285	Bahia Isabela, Isla Isabela	0 36	91 05	+1 06	+1 08	-0.2	-0.4	3.8	4.8	2.4
287	Caleta Tagus, Isla Isabela	0 15	91 22	+1 01	+1 02	+0.1	-0.4	4.1	5.2	2.5
289	Bahia de Perry, Isla Isabela	0 34	90 58	+1 06	+0 58	+0.7	-0.1	4.6	5.8	2.9
291	Caleta Aeolian, Isla Baltra	0 26	90 17	+1 10	+1 14	+1.0	-0.3	4.9	6.2	3.0
		N	W							
293	Bahia de Darwin, Isla Genovesa	0 19	89 57	+1 05	+1 09	+1.2	-0.1	5.1	6.4	3.1
					on BUENAVENTURA, p.40					
	COLOMBIA <2>									
295	Tumaco	1 50	78 44	-0 19	-0 04	*0.79	*0.79	8.2	10.2	5.1
297	BUENAVENTURA	3 54	77 05			Daily predictions		10.4	12.9	6.5
299	Los Negritos	4 17	77 30	+0 10	-0 01	-0.4	0.0	10.0	12.5	6.3
301	Rio San Juan	5 28	77 31	-0 09	0 00	-0.4	0.0	10.0	12.5	6.3
303	Bahia Cuevita	6 00	77 21	-0 09	0 00	-0.3	+0.1	10.0	12.8	6.4
305	Ensenada Utria	6 14	77 24	-0 10	-0 01	-0.2	+0.1	10.0	12.8	6.4
307	Bahia Solano	6 41	77 30	-0 28	-0 09	*0.78	*0.78	8.3	10.3	5.1
309	Bahia Cupica	6 52	77 40	-0 19	-0 10	-0.1	+0.3	10.1	13.0	6.5
311	Bahia Octavia			-0 23	-0 09	-0.1	+0.2	10.1	13.0	6.5
					on BALBOA, p.44					
	PANAMA <2>									
313	Bahia Pina	7 34	78 11	0 00	-0 11	-2.4	-0.1	10.5	13.7	6.8
315	Punta Garachine	8 05	78 25	0 00	-0 08	-2.0	-0.3	10.9	14.2	7.0
317	Isla del Rey	8 18	78 54	-0 03	-0 04	-2.2	-0.3	10.7	13.9	6.9
319	Rio Chepo	8 59	79 07	-0 01	-0 02	-0.1	0.0	12.5	16.2	8.1
321	BALBOA	8 57	79 34			Daily predictions		12.6	16.4	8.2
323	Naos Island	8 55	79 32	+0 01	0 00	-0.5	-0.1	12.4	15.9	7.8
325	Taboga	8 48	79 33	-0 05	-0 06	-0.1	0.0	12.5	16.2	8.1
327	Bahia de Chame	8 41	79 45	-0 02	-0 03	-0.1	0.0	12.5	16.2	8.1
329	Punta Mala	7 28	80 00	+0 03	-0 12	*0.64	*0.63	8.1	10.5	5.2
331	Isla Cebaco	7 31	81 13	-0 06	-0 05	*0.65	*0.63	8.1	10.5	5.3
333	Bahia Honda	7 46	81 31	-0 04	-0 03	*0.65	*0.63	8.3	10.8	5.3
335	Isla Parida	8 08	82 19	-0 00	-0 09	*0.63	*0.47	6.2	10.0	5.0
					on PUNTARENAS, p.48					
337	Puerto Armuelles	8 16	82 52	+0 55	+0 58	+0.3	-0.2	7.3	9.5	4.7
	COASTA RICA <2> Time meridian, 90°W									
339	Golfito, Golfo Dulce	8 39	83 11	-0 13	+0 02	+1.3	+1.1	7.7	9.5	5.0
341	Bahia Uvita	9 09	83 45	-0 25	-0 20	0.0	0.0	7.5	9.2	4.6
343	Quepos	9 24	84 10	-0 13	-0 04	-0.7	0.0	6.8	8.4	4.2
345	Puerto Herradura	9 39	84 40	-0 06	-0 01	0.0	0.0	7.5	9.2	4.6
347	PUNTARENAS	9 58	84 50			Daily predictions		7.5	9.2	4.6
349	Bahia de Culebra	10 38	85 40	-0 02	-0 02	0.0	0.0	7.5	9.0	4.5
351	Golfo Elena	10 56	85 49	-0 02	-0 02	-0.1	-0.1	7.5	8.8	4.6
353	Cocos Island	5 33	86 59	-0 25	-0 25	-0.5	0.0	7.0	8.5	4.3

Endnotes can be found at the end of table 2.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION Lat. N	POSITION Long. W	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Spring	Mean Tide Level
		° ′	° ′	h. m.	h. m.	ft	ft	ft	ft	ft
	NICARAGUA <2>				on PUNTARENAS, p.48					
	Time meridian, 90°W									
355	Puerto Somoza	12 12	86 46	+0 11	+0 22	-1.7	-0.1	5.9	7.3	3.6
					on LA UNION, p.52					
357	San Juan del Sur	11 15	85 53	-0 27	-0 05	*0.77	*0.77	6.2	7.6	3.8
359	Corinto (Isla Cardon)	12 29	87 10	-0 18	0 00	-2.1	-0.1	6.1	7.5	3.8
	HONDURAS <2>									
361	Amapala	13 18	87 39	-0 07	-0 06	-0.1	0.0	8.0	9.8	4.9
	EL SALVADOR									
363	LA UNION (Cutuco)	13 20	87 49		Daily predictions			8.1	10.0	5.0
365	La Libertad	13 29	89 19	-0 26	0 00	*0.67	*0.67	5.4	6.7	3.1
367	Acajutla	13 35	89 51	-0 25	-0 03	*0.64	*0.64	5.2	6.4	3.2
	GUATEMALA <2>									
369	Puerto de San Jose	13 55	90 50	-0 27	-0 03	*0.61	*0.61	5.0	6.1	3.0
371	Champerico	14 18	91 56	-0 27	-0 03	*0.61	*0.61	5.0	6.1	3.0
	MEXICO <2>									
					on SALINA CRUZ, p.56			Mean Diurnal		
373	Puerto Angel	15 39	96 30	-0 04	-0 04	-0.7	0.0	2.9	3.4	1.6
375	SALINA CRUZ	16 10	95 12		Daily predictions			3.6	4.1	1.9
377	Acapulco	16 50	99 55	-0 25	-0 24	-1.9	+0.1	1.6	2.1	1.0
					on SAN DIEGO, p.64					
379	Manzanillo	19 03	104 20	+0 37	+0 45	-2.9	-0.5	1.7	2.3	1.3
381	Puerto Vallarta	20 37	105 15	+0 22	+0 31	*0.62	*0.56	2.6	3.5	1.8
	Time meridian, 105°W									
383	Isla Socorro	18 44	111 01	-0 38	-0 29	-1.9	-0.5	2.7	3.5	1.8
385	Mazatlan	23 12	106 25	-0 38	-0 29	*0.70	*0.56	3.0	3.8	2.0
	Gulf of California									
387	Topolobampo	25 36	109 03	+0 49	+0 57	*0.68	*0.78	2.7	3.7	2.0
389	Puerto Penasco	31 18	113 33	+4 59	+5 08	*2.58	*1.33	11.7	14.1	7.0
					on GUAYMAS, p.60					
391	GUAYMAS †	27 56	110 54		Daily predictions			- -	2.6	1.3
393	Tepoca Bay	30 16	112 52	- - -	- - -	- -	- -	- -	13.0	6.5
395	Colorado River entrance <3>	31 46	114 44	- - -	- - -	- -	- -	- -	23.0	- -
397	La Paz †	24 10	110 21	+0 56	-0 47	+0.8	0.0	- -	3.4	1.7
	Baja California									
					on SAN DIEGO, p.64					
399	San Carlos	24 47	112 07	-0 09	0 00	0.0	-0.2	4.3	5.6	2.8
	Time meridian, 120°W									
401	Isla Guadalupe	28 53	116 18	-0 30	-0 21	*0.78	*0.78	3.2	4.6	2.3
403	Ensenada, Todos Santos Bay	31 51	116 38	-0 19	-0 11	*0.92	*0.89	3.8	5.3	2.7
	CALIFORNIA									
405	Point Loma	32 40	117 14	-0 09	-0 02	*0.92	*0.92	3.7	5.3	2.8
407	San Diego, Quarantine Station	32 42	117 14	-0 04	+0 02	*0.96	*0.96	3.9	5.6	2.9
409	SAN DIEGO (Broadway)	32 43	117 10		Daily predictions			4.0	5.7	3.0
411	National City, San Diego Bay	32 40	117 07	+0 04	+0 10	+0.2	0.0	4.3	5.9	3.0
413	Quivira Basin, Mission Bay	32 46	117 14	+0 05	+0 04	*0.95	*0.95	3.8	5.4	2.8
415	Crown Point, Mission Bay	32 47	117 14	-0 03	+0 16	*0.96	*0.96	3.9	5.5	2.8
417	La Jolla (Scripps Institution wharf)	32 52	117 16	-0 01	-0 05	*0.93	*0.93	3.7	5.4	2.8
419	San Clemente	33 25	117 37	-0 15	-0 11	*0.92	*0.92	3.7	5.3	2.7
	San Pedro Channel									
					on LOS ANGELES, p.68					
421	Newport Bay Entrance Corona del Mar	33 36	117 53	-0 02	-0 01	*0.97	*0.97	3.7	5.4	2.8
423	Balboa Pier, Newport Beach	33 36	117 54	-0 09	0 00	*0.96	*0.96	3.6	5.3	2.7
425	Santa Ana River entrance (inside)	33 38	117 57	+0 23	+1 47	*0.54	*0.20	2.4	3.3	1.4
427	Los Patos (highway bridge)	33 43	118 03	+1 00	+1 12	*0.83	*0.60	3.4	4.7	2.3
429	Long Beach, Outer Harbor, Pier A	33 46	118 12	+0 03	+0 08	*0.96	*0.96	3.7	5.3	2.7
431	Long Beach, Middle Harbor	33 45	118 14	-0 01	0 00	*1.01	*1.01	3.9	5.6	2.9
433	Long Beach, Inner Harbor	33 46	118 13	+0 04	+0 05	*0.96	*0.96	3.7	5.3	2.7
435	Cabrillo Beach	33 42	118 16	+0 01	+0 01	*1.00	*1.00	3.8	5.5	2.8
437	LOS ANGELES (Outer Harbor)	33 43	118 16		Daily predictions			3.8	5.5	2.9

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	CALIFORNIA									
	San Pedro Channel									
	Time meridian, 120° W									
						on LOS ANGELES, p.68				
439	Los Angeles Harbor, Mormon Island	33 45	118 16	+0 04	+0 02	-0.1	0.0	3.8	5.4	2.8
441	El Segundo, Santa Monica Bay	33 55	118 26	+0 13	+0 13	*0.96	*0.96	3.7	5.3	2.7
443	Santa Monica, Muntcipal Pier	34 00	118 30	+0 03	+0 06	-0.1	0.0	3.7	5.4	2.8
	Santa Barbara Channel									
445	Mugu Lagoon (ocean pier)	34 06	119 06	+0 03	+0 11	*0.96	*0.96	3.7	5.3	2.7
447	Port Hueneme	34 09	119 12	+0 10	+0 13	-0.1	0.0	3.7	5.4	2.8
449	Ventura	34 16	119 17	+0 09	+0 16	-0.1	0.0	3.7	5.4	2.8
451	Rincon Island, Mussel Shoals	34 21	119 27	+0 21	+0 22	*0.99	*1.04	3.7	5.5	2.8
453	Santa Barbara	34 25	119 41	+0 26	+0 26	*0.97	*0.97	3.6	5.4	2.8
455	Gaviota	34 28	120 13	+0 39	+0 37	*0.96	*0.96	3.6	5.3	2.8
	Santa Barbara Islands									
457	Wilson Cove, San Clemente Island	33 00	118 33	-0 03	-0 03	*0.94	*0.94	3.6	5.2	2.7
459	Catalina Harbor, Santa Catalina Island	33 26	118 30	+0 11	+0 17	*0.94	*0.94	3.6	5.2	2.7
461	Avalon, Santa Catalina Island	33 21	118 19	+0 06	+0 09	*0.96	*0.96	3.7	5.3	2.7
463	Santa Barbara Island	33 29	119 02	-0 02	+0 04	*0.92	*0.92	3.5	5.1	2.6
465	San Nicolas Island	33 16	119 30	+0 10	+0 21	*0.88	*0.88	3.3	4.9	2.5
467	Prisoners Harbor, Santa Cruz Island	34 01	119 41	+0 25	+0 25	*0.90	*0.90	3.4	5.0	2.6
469	Bechers Bay, Santa Rosa Island	34 00	120 03	+0 37	+0 35	*0.96	*0.96	3.6	5.3	2.8
471	Cuyler Harbor, San Miguel Island	34 03	120 21	+0 33	+0 34	*0.94	*0.94	3.5	5.2	2.7
	Outer Coast									
473	Point Arguello	34 35	120 39	+0 45	+0 43	*0.94	*0.94	3.5	5.2	2.7
475	Port San Luis wharf	35 10	120 45	+0 48	+0 51	*0.98	*0.98	3.6	5.4	2.9
477	Morro Beach, Estero Bay	35 24	120 52	+0 56	+0 56	*0.94	*0.94	3.5	5.2	2.8
479	San Simeon	35 38	121 11	+0 56	+0 58	*0.97	*0.97	3.6	5.3	2.8
481	Carmel Cove, Carmel Bay	36 31	121 56	+1 12	+1 13	*0.96	*0.96	3.5	5.2	2.8
						on SAN FRANCISCO, p.72				
483	Monterey, Monterey Bay	36 36	121 53	-1 08	-0 47	-0.5	0.0	3.6	5.4	2.9
484	General Fish Company Pier	36 48	121 47	-1 08	-0 46	-0.6	-0.1	3.6	5.3	2.8
485	Moss Landing, Ocean Pier	36 48	121 47	-1 10	-0 48	-0.7	-0.1	3.5	5.2	2.8
487	Elkhorn Yacht Club	36 49	121 47	-1 09	-0 45	-0.6	-0.1	3.5	5.3	2.8
489	Elkhorn Slough, Highway 1 Bridge	36 49	121 47	-1 06	-0 49	-0.7	-0.1	3.5	5.2	2.8
491	Pacific Mariculture Dock	36 49	121 46	-0 54	-0 40	-0.5	0.0	3.6	5.4	2.9
493	Elkhorn, Elkhorn Slough	36 49	121 45	-0 48	-0 42	-0.6	0.0	3.5	5.3	2.8
495	Kirby Park, Elkhorn Slough	36 50	121 45	-0 43	-0 39	-0.4	-0.1	3.7	5.5	2.9
497	Elkhorn Slough railroad bridge	36 51	121 45	-0 36	-0 39	-0.4	-0.1	3.7	5.5	2.9
499	Santa Cruz, Monterey Bay	36 58	122 01	-1 15	-0 58	-0.6	0.0	3.5	5.3	2.8
501	Ano Nuevo Island	37 06	122 20	-1 24	-1 04	-0.7	-0.1	3.5	5.2	2.7
503	Princeton, Halfmoon Bay	37 30	122 29	-1 06	-0 50	-0.3	0.0	3.8	5.5	3.0
505	Southeast Farallon Island	37 42	123 00	-0 39	-0 19	-0.3	0.0	3.8	5.6	3.0
507	San Francisco Bar	37 46	122 38	-0 35	-0 31	-0.2	0.0	3.9	5.6	3.0
509	Ocean Beach, outer coast	37 46	122 31	-0 49	-0 35	+0.1	0.0	4.2	6.0	3.2
	San Francisco Bay									
511	Point Bonita, Bonita Cove	37 49	122 32	-0 17	-0 10	+0.3	0.0	4.3	6.0	3.3
513	SAN FRANCISCO (Golden Gate)	37 48	122 28			Daily predictions		4.1	5.8	3.2
515	Alcatraz Island	37 50	122 25	+0 14	+0 18	0.0	0.0	4.1	5.8	3.1
517	San Francisco, North Point, Pier 41	37 49	122 25	+0 13	+0 11	+0.2	0.0	4.3	6.1	3.3
519	Rincon Point, Pier 22 1/2	37 47	122 23	+0 23	+0 25	+0.4	0.0	4.6	6.3	3.4
521	Yerba Buena Island	37 49	122 27	+0 32	+0 40	+0.3	0.0	4.4	6.1	3.3
523	Oakland, Matson Wharf	37 49	122 20	+0 26	+0 36	+0.3	0.0	4.4	6.2	3.3
525	Oakland Pier	37 48	122 20	+0 33	+0 48	+0.2	0.0	4.3	6.0	3.2
527	Oakland Inner Harbor	37 48	122 17	+0 37	+0 41	+0.5	0.0	4.7	6.4	3.4
529	Alameda	37 46	122 18	+0 32	+0 41	+0.6	0.0	4.8	6.5	3.5
531	Oakland Harbor, Grove Street	37 48	122 17	+0 33	+0 42	+0.4	0.0	4.5	6.2	3.3
533	Oakland Harbor, Park Street Bridge	37 46	122 14	+0 38	+0 44	+0.6	0.0	4.7	6.4	3.4
535	Bay Farm Island, San Leandro Bay	37 45	122 14	+0 49	+0 59	+0.8	0.0	4.9	6.6	3.6
537	Oakland Airport	37 44	122 12	+0 47	+0 52	+0.8	0.0	4.9	6.6	3.6
539	Potrero Point	37 46	122 23	+0 33	+0 46	+0.5	0.0	4.6	6.3	3.4
541	Hunters Point	37 44	122 21	+0 25	+0 39	+0.9	0.0	5.0	6.7	3.6
543	San Leandro Channel	37 42	122 12	+1 01	+1 29	+1.4	0.0	5.5	7.2	3.9
545	Roberts Landing, 1.3 miles west of	37 40	122 12	+0 52	+1 28	+1.4	+0.1	5.4	7.2	3.9
547	South San Francisco	37 40	122 23	+0 38	+0 56	+1.2	0.0	5.3	7.0	3.8
549	Oyster Point Marina	37 40	122 23	+0 48	+1 07	+1.1	0.0	5.2	6.9	3.7
551	Point San Bruno	37 39	122 23	+0 38	+1 10	+1.1	+0.1	5.1	6.9	3.7
553	Seaplane Harbor	37 38	122 23	+0 42	+1 03	+1.4	0.0	5.4	7.2	3.9
555	Coyote Point Marina	37 36	122 19	+0 42	+1 08	+1.5	0.0	5.6	7.4	3.9
557	San Mateo Bridge (west end)	37 35	122 15	+0 52	+1 20	+1.8	+0.1	5.8	7.6	4.1
559	San Mateo Bridge (east end)	37 36	122 11	+0 48	+1 19	+1.8	0.0	5.9	7.7	4.1
561	Alameda Creek	37 36	122 09	+1 03	+2 31	+0.3	-0.8	5.2	6.1	2.9
563	Coyote Hills Slough entrance	37 34	122 08	+1 02	+2 26	+0.9	-0.6	5.6	6.7	3.3
565	Bay Slough, west end	37 33	122 15	+0 48	+1 28	+1.8	0.0	5.9	7.7	4.1

Endnotes can be found at the end of table 2.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION Lat. N	POSITION Long. W	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′	° ′	h. m.	h. m.	ft	ft	ft	ft	ft
	San Francisco Bay-Continued Time meridian, 120°W			* on SAN FRANCISCO, p.72						
567	Bay Slough, east end	37 33	122 13	+0 49	+1 52	+1.4	-0.3	5.8	7.3	3.8
569	Redwood Creek Marker #8	37 32	122 12	+0 53	+1 28	*1.41	*1.05	6.2	8.0	4.3
571	Redwood Creek entrance (inside)	37 31	122 12	+1 06	+1 38	+2.1	+0.1	6.1	7.9	4.2
573	South Bay Wreck	37 33	122 10	+1 02	+1 37	+2.2	+0.1	6.2	8.0	4.3
575	Corkscrew Slough	37 30	122 13	+1 03	+1 42	+2.2	+0.1	6.2	8.0	4.3
577	Redwood City, Wharf 5	37 30	122 13	+0 58	+1 32	+2.2	+0.1	6.2	8.0	4.3
579	West Point Slough	37 30	122 12	+1 03	+1 36	+2.2	+0.1	6.2	8.0	4.3
581	Smith Slough	37 30	122 14	+1 15	+1 58	+2.1	0.0	6.2	7.9	4.2
583	Newark Slough	37 31	122 05	+1 11	+1 58	+2.6	+0.1	6.6	8.4	4.2
585	Dumbarton Highway Bridge	37 30	122 07	+1 00	+1 38	+2.6	+0.1	6.6	8.4	4.5
587	Ravenswood Slough <17>	37 30	122 10	+1 05	- - -	- -	- -	- -	- -	- -
589	Granite Rock	37 30	122 13	+1 03	+1 38	+2.2	+0.1	6.2	8.0	4.3
591	Palo Alto Marker #8 <18>	37 28	122 06	+1 07	- - -	- -	- -	- -	- -	- -
593	Palo Alto Yacht Harbor	37 27	122 06	+1 09	+2 09	+2.5	0.0	6.6	8.3	4.4
595	Mowry Slough	37 30	122 02	+1 12	+2 07	+2.6	0.0	6.7	8.4	4.4
597	Calaveras Point, west of	37 28	122 04	+1 05	+1 49	+2.8	+0.1	6.8	8.5	4.6
599	Mud Slough railroad bridge <18>	37 28	121 58	+1 19	+2 59	+1.7	-0.6	6.4	7.5	3.7
601	Guadalupe Slough	37 27	122 02	+1 14	+2 15	+2.7	0.0	6.8	8.5	4.5
603	Upper Guadalupe Slough	37 26	122 00	+1 23	+2 21	+3.4	+0.2	7.3	9.2	5.0
605	Coyote Creek, Alviso Slough	37 28	122 01	+1 13	+2 08	+3.1	+0.2	7.0	8.9	4.8
607	Gold Street Bridge, Alviso Slough	37 25	121 58	+1 15	+2 34	+3.4	+0.1	7.4	9.2	4.9
609	Coyote Creek, Tributary #1	37 27	121 58	+1 21	+2 45	+2.6	-0.3	7.0	8.4	4.3
611	Coyote Creek, Tributary #2 <18>	37 28	121 57	+1 27	- - -	- -	- -	- -	- -	- -
613	Coyote Creek, Tributary #3 <18>	37 28	121 57	+1 23	- - -	- -	- -	- -	- -	- -
615	Sausalito	37 51	122 29	+0 10	+0 14	-0.3	0.0	3.8	5.6	3.0
617	Sausalito, Corps of Engineers Dock	37 52	122 30	+0 11	+0 21	-0.2	0.0	3.9	5.6	3.1
619	Angel Island (west side)	37 52	122 27	+0 13	+0 21	-0.2	0.0	3.9	5.6	3.0
621	Angel Island, East Garrison	37 52	122 25	+0 16	+0 20	+0.1	0.0	4.2	5.9	3.2
623	Point Chauncey	37 54	122 27	+0 28	+0 32	-0.2	0.0	3.9	5.6	3.0
625	Berkeley	37 52	122 18	+0 21	+0 38	+0.1	0.0	4.2	5.9	3.2
627	Point Isabel	37 54	122 19	+0 23	+0 33	+0.1	0.0	4.2	5.9	3.2
629	Richmond Inner Harbor	37 55	122 22	+0 25	+0 36	0.0	0.0	4.2	5.8	3.2
631	Chevron Oil Company Pier	37 56	122 24	+0 29	+0 36	0.0	0.0	4.2	5.9	3.2
633	Point Orient	37 58	122 26	+0 47	+0 52	0.0	0.0	4.1	5.8	3.2
635	Corte Madera Creek	37 57	122 31	+0 37	+0 52	-0.1	0.0	4.0	5.7	3.1
637	Point San Quentin	37 57	122 28	+0 39	+0 50	-0.2	-0.1	4.0	5.7	3.1
	San Pablo Bay									
639	Point San Pedro	37 59	122 27	+0 59	+1 01	+0.1	0.0	4.3	5.9	3.2
641	Pinole Point	38 01	122 22	+1 12	+1 26	*1.04	*0.92	4.4	6.0	3.2
643	Hercules	38 01	122 18	+1 25	+1 49	-0.1	-0.2	4.2	5.7	3.0
645	Petaluma River entrance	38 07	122 30	+1 22	+2 11	+0.1	-0.1	4.4	5.9	3.2
647	Lakeville, Petaluma River	38 12	122 34	+1 59	+2 50	*1.11	*0.81	4.9	6.3	3.4
649	Upper drawbridge, Petaluma River	38 14	122 37	+2 10	+3 10	*1.16	*0.81	5.1	6.5	3.5
651	Gallinas Creek	38 01	122 30	+1 11	+1 30	+0.1	-0.1	4.3	5.9	3.1
653	Hog Island, San Antonio Creek	38 09	122 33	+1 47	+2 36	+0.3	-0.2	4.7	6.1	3.2
655	Sonoma Creek	38 09	122 24	+1 31	+2 34	-0.2	-0.3	4.2	5.6	3.0
657	Wingo, Sonoma Creek	38 13	122 26	+2 12	+3 11	+0.1	-0.3	4.5	5.9	3.1
	Carquinez Strait									
659	Mare Island	38 04	122 15	+1 36	+2 00	-0.3	-0.2	4.0	5.5	2.9
661	Mare Island Strait	38 06	122 16	+1 47	+2 14	-0.1	-0.2	4.2	5.7	3.0
663	Edgerley Island, Napa River	38 12	122 19	+2 02	+2 29	+0.3	-0.3	4.7	6.1	3.2
665	Brazos Drawbridge, Napa River	38 12	122 18	+2 02	+2 29	+0.7	-0.2	5.0	6.5	2.5
667	Napa, Napa River	38 18	122 17	+2 16	+2 52	+1.4	0.0	5.5	7.1	3.8
669	Selby	38 03	122 15	+1 29	+2 04	+0.6	0.0	4.7	6.3	3.4
671	Crockett	38 04	122 13	+1 39	+2 03	-0.2	-0.2	4.0	5.5	3.0
673	Benicia	38 03	122 08	+2 11	+2 34	-0.6	-0.3	3.8	5.1	2.7
675	Suisun Point	38 02	122 07	+2 08	+2 36	-0.7	-0.3	3.7	5.0	2.6
	Suisun Bay									
677	Suisun Slough entrance	38 08	122 04	+2 45	+3 32	-1.1	-0.4	3.4	4.6	2.4
679	Pierce Harbor, Goodyear Slough	38 08	122 06	+3 04	+3 46	-1.1	-0.4	3.4	4.5	2.4
681	Joice Island, Suisun Slough	38 11	122 03	+2 59	+3 50	*0.86	*0.62	3.8	5.0	2.6
683	Suisun City, Suisun Slough	38 14	122 02	+3 12	+4 08	*0.89	*0.61	4.0	5.2	2.7
685	Naval Weapon Station, Suisun Bay	38 03	122 02	+2 31	+3 08	-0.9	-0.4	3.6	4.9	2.6
687	Montezuma Slough Bridge	38 11	121 59	+3 09	+3 52	-0.9	-0.4	3.6	4.8	2.5
689	Bradmoor Island, Nurse Slough	38 11	121 55	+3 30	+4 12	-0.6	-0.4	3.9	5.2	2.7
691	Meins Landing, Montezuma Slough	38 08	121 54	+3 29	+4 16	-1.0	-0.4	3.6	4.7	2.5
693	Montezuma Slough	38 05	121 53	+3 47	+4 33	-1.5	-0.5	3.1	4.2	2.1
695	Point Buckler	38 06	122 01	+2 40	+3 24	-0.3	-0.3	4.1	5.5	2.8
697	Mallard Island Ferry Wharf	38 03	121 55	+3 26	+4 03	-1.7	-0.5	2.9	4.0	2.0
699	Pittsburg, New York Slough	38 02	121 53	+3 30	+4 11	*0.70	*0.55	3.0	4.1	2.1
	San Joaquin River									
701	Antioch	38 01	121 49	+4 04	+4 45	*0.64	*0.51	2.8	3.8	2.0
703	Threemile Slough entrance	38 05	121 41	+4 54	+5 54	*0.60	*0.45	2.6	3.6	1.8
705	Prisoners Point	38 04	121 33	+5 53	+6 45	*0.60	*0.45	2.6	3.5	1.8
707	Wards Island	38 03	121 30	+6 16	+6 57	*0.58	*0.36	2.5	3.4	1.7

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′	° ′	h. m.	h. m.	ft	ft	ft	ft	ft
		N	W							
	San Joaquin River-Continued Time meridian, 120°W					on SAN FRANCISCO, p.72				
709	Blackslough Landing	38 00	121 25	+6 32	+7 21	*0.62	*0.36	2.7	3.6	1.8
711	Stockton	37 58	121 17	+6 37	+7 39	*0.68	*0.43	3.1	4.0	2.0
	Mokelumne River									
713	Georgiana Slough entrance	38 08	121 35	+6 05	+6 51	*0.54	*0.38	2.4	3.2	1.6
715	Terminous, South Fork	38 07	121 30	+6 25	+7 17	*0.58	*0.36	2.5	3.4	1.7
717	New Hope Bridge <4>	38 14	121 29	+6 49	+7 58	*0.62	*0.45	2.7	3.6	1.8
719	Bishop Cut, Disappointment Slough	38 03	121 25	+6 43	+7 18	*0.66	*0.43	2.9	3.9	2.0
721	False River	38 03	121 39	+5 16	+5 51	*0.55	*0.42	2.4	3.3	1.7
723	Irish Landing, Sand Mound Slough	38 02	121 35	+5 56	+6 36	*0.62	*0.45	2.7	3.6	1.8
725	Orwood, Old River	37 56	121 34	+6 59	+7 35	*0.63	*0.45	2.8	3.7	1.9
727	Holt, Whiskey Slough	37 56	121 26	+6 45	+7 41	*0.67	*0.45	3.0	3.9	2.0
728	Borden Highway Bridge, Old River	37 53	121 34	+7 11	+7 41	*0.53	*0.40	2.3	3.2	1.6
729	Borden Highway Bridge, Middle River	37 54	121 29	+7 22	+7 59	*0.54	*0.37	2.4	3.2	1.6
731	Grant Line Canal (drawbridge)	37 49	121 27	+8 41	+9 22	*0.63	*0.45	2.8	3.7	1.9
	Sacramento River									
733	Collinsville	38 04	121 51	+3 43	+4 26	*0.65	*0.55	2.8	3.8	2.0
735	Threemile Slough	37 06	121 42	+4 20	+5 04	*0.69	*0.55	3.0	4.0	2.1
737	Rio Vista <4>	38 09	121 42	+4 05	+5 13	*0.81	*0.55	3.6	4.7	2.4
739	Steamboat Slough, Snug Harbor Marina	38 12	121 37	+4 55	+5 54	*0.67	*0.42	3.0	4.0	2.0
741	Snodgrass Slough	38 16	121 29	+7 31	+8 42	*0.40	*0.27	1.8	2.5	1.2
743	Clarksburg <4>	38 25	121 31	+6 25	+8 04	*0.50	*0.27	2.3	2.9	1.4
745	Sacramento <4>	38 35	121 30	+7 34	+9 34	*0.50	*0.27	2.3	2.9	1.4
	Outer Coast									
747	Bolinas Bay	37 54	122 41	-0 25	-0 11	-0.1	0.0	4.0	5.7	3.1
749	Bolinas Lagoon	37 55	122 41	-0 11	+0 37	-1.6	-0.4	3.0	4.3	2.2
751	Point Reyes	38 00	122 58	-0 50	-0 26	-0.1	0.0	4.0	5.8	3.2
753	Tomales Bay entrance	38 14	122 59	-0 12	+0 20	*0.87	*0.91	3.5	5.2	2.7
755	Blakes Landing, Tomales Bay	38 11	122 55	+0 32	+1 15	-0.7	-0.2	3.6	5.2	2.7
757	Marshall, Tomales Bay	38 10	122 54	+0 38	+1 16	-0.6	-0.1	3.6	5.4	2.8
759	Inverness, Tomales Bay	38 06	122 51	+0 40	+1 24	-0.6	-0.2	3.7	5.3	2.8
761	Bodega Harbor entrance	38 18	123 03	-0 38	-0 16	-0.2	+0.1	2.8	5.7	3.1
763	Fort Ross	38 31	123 15	-0 51	-0 30	-0.2	0.0	3.9	5.7	3.0
765	Arena Cove	38 55	123 43	-0 40	-0 17	0.0	0.0	4.0	5.9	3.2
767	Point Arena	38 57	123 44	-0 42	-0 21	-0.1	0.0	4.0	5.8	3.1
769	Albion	39 14	123 46	-0 31	-0 19	-0.1	0.0	4.0	5.8	3.1
771	Little River Harbor	39 16	123 47	-0 31	-0 19	-0.1	0.0	4.0	5.8	3.1
773	Mendocino, Mendocino Bay	39 18	123 48	-0 38	-0 21	-0.1	0.0	4.0	5.8	3.1
775	Fort Bragg Landing	39 27	123 49	-0 30	-0 20	0.0	0.0	4.1	5.8	3.1
777	Noyo River	39 25	123 48	-0 31	-0 12	+0.1	+0.1	4.1	6.0	3.2
779	Westport	39 38	123 47	-0 31	-0 22	-0.1	0.0	4.0	5.8	3.1
781	Shelter Cove	40 02	124 04	-0 39	-0 17	+0.2	+0.1	4.2	6.0	3.3
783	Cape Mendocino	40 26	124 25	-0 28	+0 01	-0.1	0.0	4.0	5.7	3.1
						on CRESCENT CITY, p.80				
785	Eel River entrance	40 38	124 19	-0 05	-0 02	*0.89	*1.00	4.4	6.3	3.4
						on HUMBOLDT BAY, p.76				
	Humboldt Bay									
787	Entrance	40 46	124 15	-0 09	+0 07	-0.7	0.0	4.3	6.2	3.3
789	HUMBOLDT BAY (North Spit)	40 46	124 13			Daily predictions		5.0	6.9	3.7
791	Fields Landing	40 43	124 13	-0 10	-0 02	-0.1	0.0	4.9	6.8	3.7
793	Hookton Slough	40 41	124 13	+0 15	+0 25	-0.2	0.0	4.8	6.6	3.6
794	Elk River Railroad Bridge <18>	40 45	124 12	+0 10	+1 26	-1.8	-0.9	4.0	5.1	2.4
795	Buckspo't	40 47	124 12	+0 05	+0 02	+0.1	0.0	5.0	7.0	3.8
796	Eureka	40 48	124 10	+0 17	+0 07	+0.4	0.0	5.3	7.3	3.9
797	Eureka Slough Bridge	40 48	124 08	+0 23	+0 06	+0.5	0.0	5.5	7.4	4.0
799	Samoa	40 50	124 11	+0 19	+0 07	+0.4	0.0	5.4	7.3	4.0
801	Arcata Wharf	40 51	124 07	+0 48	+0 54	+0.1	+0.1	5.0	7.0	3.8
						on CRESCENT CITY, p.80				
803	Trinidad Harbor	41 03	124 09	+0 01	+0 01	*0.96	*0.98	4.9	6.7	3.6
805	CRESCENT CITY	41 45	124 11			Daily predictions		5.1	7.0	3.8
	OREGON									
807	Brookings, Chetco Cove	42 03	124 17	+0 01	+0 04	*1.00	*1.00	5.1	6.9	3.7
809	Wedderburn, Rogue River	42 26	124 25	+0 09	+0 16	*0.95	*0.92	4.9	6.7	3.6
811	Port Orford	42 44	124 30	+0 07	+0 09	*1.05	*1.08	5.3	7.3	3.9
813	Bandon, Coquille River	43 07	124 25	+0 23	+0 28	*1.00	*0.92	5.2	7.0	3.7
	Coos Bay									
815	Charleston	43 21	124 19	+0 30	+0 30	*1.10	*1.00	5.7	7.5	4.1
817	Empire	43 24	124 17	+1 12	+1 20	*0.95	*0.92	4.9	6.7	3.6
819	Coos Bay	43 23	124 13	+2 01	+1 58	*1.06	*0.92	5.6	7.3	3.9
	Umpqua River									
821	Entrance	43 41	124 12	+0 40	+0 33	*1.00	*1.00	5.1	6.9	3.7
823	Gardiner	43 44	124 07	+1 31	+1 39	*0.97	*0.83	5.1	6.7	3.5
825	Reedsport	43 42	124 08	+1 46	+1 54	*0.97	*0.83	5.1	6.7	3.6

Endnotes can be found at the end of table 2.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time: High water	DIFFERENCES Time: Low water	DIFFERENCES Height: High water	DIFFERENCES Height: Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	OREGON-Continued Time meridian, 120°W			on CRESCENT CITY, p.80						
	Siuslaw River									
827	Entrance	44 01	124 08	+0 29	+0 33	*1.06	*1.00	5.5	7.3	4.0
829	Florence	43 58	124 06	+1 19	+1 28	*0.95	*0.83	5.0	6.6	3.5
831	Waldport, Alsea Bay	44 26	124 04	+0 56	+1 01	*1.11	*1.00	5.8	7.7	4.1
	Yaquina Bay and River									
833	Bar at entrance	44 37	124 05	+0 34	+0 39	*1.14	*1.08	5.9	7.9	4.2
835	Newport	44 38	124 03	+0 44	+0 42	*1.16	*1.08	6.0	8.0	4.3
837	Southbeach	44 38	124 03	+0 33	+0 31	*1.21	*1.08	6.3	8.3	4.5
839	Yaquina	44 36	124 01	+0 55	+0 55	*1.19	*1.08	6.2	8.2	4.4
841	Winant	44 35	124 00	+1 03	+1 16	*1.19	*1.00	6.3	8.2	4.3
843	Toledo	44 37	123 56	+1 29	+1 39	*1.17	*0.92	6.3	8.1	4.2
845	Taft, Siletz Bay	44 56	124 01	+0 48	+1 13	*0.94	*0.75	5.0	6.6	3.4
847	Kernville, Siletz River	44 54	124 00	+1 24	+1 53	*0.86	*0.67	4.6	6.1	3.1
849	Nestucca Bay entrance	45 10	123 58	+0 55	+1 12	*1.10	*0.92	5.8	7.6	4.0
	Tillamook Bay									
851	Barview	45 34	123 57	+0 42	+0 56	*1.08	*0.92	5.7	7.5	3.9
853	Garibaldi	45 34	123 55	+1 14	+1 16	*1.13	*1.00	5.9	7.8	4.2
855	Miami Cove	45 33	123 54	+1 15	+1 26	*1.06	*0.92	5.6	7.4	3.9
857	Bay City	45 31	123 54	+1 33	+2 00	*1.02	*0.83	5.4	7.1	3.7
859	Tillamook, Hoquarten Slough	45 28	123 51	+1 52	+3 15	*0.94	*0.58	5.2	6.6	3.3
	Nehalem River									
861	Brighton	45 40	123 56	+0 51	+0 54	*1.13	*1.00	5.9	7.8	4.1
863	Nehalem	45 43	123 53	+1 17	+1 56	*1.03	*0.75	5.6	7.2	3.7
	OREGON and WASHINGTON Columbia River <5>			on ASTORIA, p.84						
865	Columbia River entrance (N. Jetty)	46 16	124 04	-0 44	-1 00	-1.0	+0.1	5.6	7.5	4.0
867	Ilwaco, Baker Bay, Wash	46 18	124 02	-0 13	+0 01	-0.8	-0.1	6.0	7.6	4.0
869	Chinook, Baker Bay, Wash	46 16	123 57	-0 30	-0 52	*0.95	*1.12	6.1	8.1	4.3
871	Hungry Harbor, Wash	46 16	123 52	+0 04	-0 09	-0.2	+0.1	6.4	8.2	4.4
873	Point Adams, Oreg	46 12	123 57	-0 25	-0 38	-0.2	+0.1	6.4	8.2	4.4
875	Warrenton, Skipanon River, Oreg	46 10	123 55	-0 13	-0 19	-0.1	+0.1	6.5	8.3	4.4
877	Astoria (Youngs Bay), Oreg	46 10	123 50	-0 13	-0 14	+0.1	+0.1	6.7	8.6	4.5
879	Astoria (Port Docks), Oreg	46 11	123 52	-0 08	-0 03	-0.5	0.0	6.2	8.0	4.2
881	ASTORIA (Tongue Point), Oreg	46 12	123 46	Daily predictions				6.6	8.4	4.4
882	Knappa, Knappa Slough	46 11	123 35	+0 29	+0 58	*0.97	*0.86	6.5	8.2	4.2
883	Settlers Point, Oreg	46 10	123 41	+0 22	+0 53	-0.5	-0.1	6.3	8.0	4.1
885	Harrington Point, Wash	46 16	123 39	+0 21	+0 52	-0.8	-0.2	6.1	7.7	3.9
887	Skamokawa, Steamboat Slough, Wash	46 16	123 27	+0 56	+1 45	- -	- -	5.6	6.9	- -
889	Cathlamet, Wash	46 12	123 23	+1 15	+2 15	- -	- -	5.2	6.4	- -
891	Wauna, Oreg	46 10	123 24	+1 17	+2 19	- -	- -	5.2	6.3	- -
893	Eagle Cliff, Wash	46 10	123 14	+1 43	+3 01	- -	- -	4.5	5.5	- -
895	Stella, Wash	46 11	123 07	+2 01	+3 30	- -	- -	4.0	4.9	- -
897	Longview, Wash	46 06	122 57	+2 27	+4 14	- -	- -	3.3	4.0	- -
899	Kalama, Wash	46 00	122 51	+2 54	+4 55	- -	- -	2.6	3.2	- -
901	Saint Helens, Oreg	45 52	122 48	+3 31	+5 44	- -	- -	2.0	2.5	- -
903	Knapp Landing, Wash	45 44	122 45	+4 26	+6 28	- -	- -	1.5	2.0	- -
905	Kelley Point, Oreg	45 39	122 46	+5 28	+7 16	- -	- -	1.4	2.0	- -
907	St. Johns, Willamette River, Oreg	45 35	122 46	+5 08	+7 26	- -	- -	1.7	2.2	- -
909	Portland, Willamette River, Oreg	45 31	122 40	+5 05	+7 37	- -	- -	1.8	2.4	- -
911	Vancouver, Wash	45 37	122 40	+5 45	+7 38	- -	- -	1.3	1.8	- -
913	Ellsworth, Wash	45 36	122 33	+6 11	+8 03	- -	- -	1.0	1.4	- -
915	Washougal, Wash	45 35	122 23	- - -	- - -	- -	- -	0.5	0.9	- -
917	Warrendale, Oreg	45 37	122 00	- - -	- - -	- -	- -	0.4	0.6	- -
	WASHINGTON			on ABERDEEN, p.88						
919	Long Beach	46 21	124 03	-1 05	-0 59	*0.80	*0.80	6.2	8.1	4.4
	Willapa Bay and River									
921	Willapa Bay entrance	46 43	124 04	-0 37	-0 43	*0.80	*0.80	6.2	8.1	4.4
923	Nahcotta, Willapa Bay	46 30	124 01	+0 20	+0 16	0.0	-0.1	8.0	10.2	5.4
925	Tarlatt Slough, Willapa Bay	46 22	124 00	+0 21	+0 54	*0.91	*0.47	7.9	9.4	4.6
927	Bay Center, Palix River	46 38	123 57	-0 09	+0 04	-1.3	-0.2	6.8	8.9	4.7
929	Toke Point, Willapa Bay	46 42	123 58	-0 36	-0 19	-1.6	-0.2	6.5	8.5	4.5
931	South Bend, Willapa River	46 40	123 48	-0 04	-0 08	-0.3	-0.2	7.8	9.8	5.2
933	Raymond, Willapa River	46 41	123 45	+0 02	-0 03	-0.2	-0.1	7.8	9.9	5.3
935	Grayland	46 49	124 06	-1 05	-0 59	*0.80	*0.80	6.2	8.1	4.4
937	Westport (ocean)	46 53	124 07	-1 05	-0 56	*0.84	*0.84	6.4	8.5	4.6
	Grays Harbor									
939	Point Chehalis	46 55	124 07	-0 32	-0 43	-1.1	-0.1	6.9	9.0	4.8
941	Bay City	46 52	124 04	-0 15	-0 32	-0.9	-0.1	7.1	9.2	4.9
943	Markham	46 54	124 00	-0 19	-0 12	-0.7	-0.2	7.2	9.2	4.9
945	North Channel	46 58	123 57	-0 06	-0 01	-0.4	-0.1	7.6	9.7	5.2
947	ABERDEEN	46 58	123 51	Daily predictions				7.9	10.1	5.4
949	Montesano, Chehalis River	46 58	123 36	+1 21	+1 48	*0.80	*0.53	6.7	8.1	4.1
951	Pacific Beach	47 13	124 12	-1 02	-0 59	*0.85	*0.85	6.5	8.6	4.6
953	Point Grenville	47 18	124 16	-1 02	-0 59	*0.85	*0.85	6.5	8.6	4.6
955	Destruction Island	47 40	124 29	-1 01	-1 03	*0.87	*0.87	6.6	8.7	4.7
957	La Push, Quillayute River	47 55	124 38	-1 00	-0 47	*0.84	*0.84	6.5	8.5	4.6
959	Cape Alava (Flattery Rocks)	48 10	124 44	-0 53	-0 39	*0.81	*0.81	6.0	8.2	4.4

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Strait of Juan de Fuca <6> Time meridian, 120° W			on ABERDEEN, p.88						
961	Cape Flattery, Tatoosh Island	48 23	124 44	-0 46	-0 46	*0.80	*0.80	5.8	8.0	4.3
963	Neah Bay	48 22	124 37	-0 37	-0 35	*0.78	*0.78	5.5	7.9	4.3
965	Clallam Bay	48 16	124 18	-0 11	-0 08	*0.76	*0.76	5.0	7.7	4.3
967	Twin Rivers	48 10	123 57	+0 09	+0 11	*0.71	*0.71	4.4	7.0	4.1
				on PORT TOWNSEND, p.92						
969	Crescent Bay	48 10	123 44	-2 41	-2 02	*0.80	*0.80	4.1	6.7	4.1
971	Port Angeles	48 07	123 26	-1 33	-1 23	*0.86	*0.86	4.2	7.2	4.4
973	Dungeness	48 10	123 07	-0 54	-0 38	*0.90	*0.90	4.4	7.6	4.7
975	Sequim Bay entrance	48 05	123 03	-0 39	-0 07	*0.94	*0.94	4.8	7.9	4.8
977	Gardiner, Discovery bay	48 04	122 55	-0 47	-0 17	*0.94	*0.94	4.8	7.9	4.8
979	Smith Island	48 19	122 50	-0 13	-0 25	*0.83	*0.83	4.2	7.0	4.5
981	Point Partridge	48 14	122 46	-0 11	-0 15	*0.92	*0.92	4.5	7.7	4.7
	Admiralty Inlet									
983	Admiralty Head	48 10	122 40	-0 11	+0 20	0.0	-0.1	5.2	8.4	5.1
985	PORT TOWNSEND	48 07	122 45			Daily predictions		5.2	8.4	5.1
987	Port Townsend (Point Hudson)	48 07	122 45	-0 11	-0 06	+0.2	0.0	5.3	8.6	5.2
989	Marrowstone Point	48 06	122 41	+0 02	+0 05	+0.4	-0.1	5.6	8.8	5.3
991	Mystery Bay, Marrowstone Island	48 03	122 41	+0 13	+0 48	-0.2	-0.1	5.0	8.2	5.0
993	Bush Point	48 02	122 36	+0 10	+0 41	*1.11	*1.05	5.9	9.4	5.6
995	Oak Bay	48 01	122 43	+0 08	+0 27	+0.4	0.0	6.0	9.4	5.6
	Hood Canal			on SEATTLE, p.96						
997	Port Ludlow	47 55	122 41	-0 28	-0 17	*0.87	*0.87	6.4	9.9	5.9
999	Port Gamble	47 51	122 35	-0 11	-0 04	*0.90	*0.90	6.7	10.3	6.1
1001	Bangor Wharf	47 45	122 44	-0 15	+0 08	-0.4	0.0	7.3	10.9	6.4
1003	Zelatched Point, Dabob Bay	47 43	122 49	-0 04	-0 01	0.0	+0.1	7.6	11.5	6.7
1005	Seateck	47 38	122 50	+0 02	-0 07	+0.2	+0.1	7.8	11.6	6.8
1007	Pleasant Harbor	47 40	122 55	-0 08	+0 05	+0.1	+0.1	7.7	11.6	6.8
1009	Union	47 21	123 06	+0 01	+0 14	+0.3	+0.1	7.9	11.8	6.9
	Puget Sound									
1011	Hansville	+47 55	122 33	-0 02	+0 08	-1.1	-0.1	6.7	10.3	6.1
1013	Point No Point	47 55	122 32	-0 11	-0 12	*0.91	*0.91	6.7	10.4	6.1
1015	Edmonds	47 49	122 23	0 00	+0 06	-0.5	0.0	7.2	10.9	6.4
1017	Port Madison	47 42	122 32	-0 03	-0 04	0.0	0.0	7.7	11.4	6.6
1019	Poulsbo, Liberty Bay	47 44	122 39	+0 07	+0 12	+0.5	+0.1	8.1	11.9	6.9
1021	Brownsville, Port Orchard	47 34	122 37	+0 07	+0 12	+0.3	0.0	8.0	11.7	6.8
1023	SEATTLE (Madison St.), Elliott Bay	47 36	122 20			Daily predictions		7.7	11.4	6.7
1025	Eighth Ave. S., Duwamish waterway	47 32	122 19	+0 10	+0 11	-0.2	0.0	7.5	11.1	6.5
1027	Port Blakely	47 36	122 30	+0 07	+0 07	+0.1	0.0	7.8	11.5	6.7
1029	Pleasant Beach, Rich Passage	47 36	122 32	+0 06	+0 11	+0.1	0.0	7.8	11.5	6.7
1031	Bremerton, Port Orchard	47 33	122 38	+0 12	+0 16	+0.3	0.0	8.0	11.7	6.8
1033	Tracyton, Dyes Inlet	47 37	122 40	+0 35	+1 00	+0.9	0.0	8.6	12.3	7.1
1035	South Colby, Yukon Harbor	47 31	122 32	+0 06	+0 11	+0.2	0.0	7.9	11.6	6.7
1037	Des Moines	47 24	122 20	+0 08	+0 13	+0.3	0.0	8.0	11.7	6.8
1039	Burton, Quartermaster Harbor	47 23	122 28	+0 12	+0 17	+0.5	0.0	8.2	11.9	6.9
1041	Gig Harbor	47 20	122 35	+0 05	+0 15	+0.5	0.0	8.2	11.8	6.9
1043	Tacoma, Commencement Bay	47 17	122 25	+0 12	+0 10	+0.4	0.0	8.1	11.8	6.8
1045	Arletta, Hale Passage	47 17	122 39	+0 22	+0 37	+1.6	0.0	9.3	13.0	7.4
1047	Home, Von Geldern Cove, Carr Inlet	47 16	122 45	+0 32	+0 43	+2.2	+0.2	9.7	13.6	7.8
1049	Wauna, Carr Inlet	47 23	122 38	+0 19	+0 37	+1.7	0.0	9.4	13.1	7.5
1051	Steilacoom	47 10	122 36	+0 21	+0 36	+1.7	0.0	9.4	13.1	7.5
1053	Hyde Point, McNeil Island	47 12	122 39	+0 28	+0 45	+2.0	+0.2	9.5	13.4	7.7
1055	Sequalitchew Creek, Nisqually Reach	47 07	122 40	+0 29	+0 46	+2.0	+0.1	9.6	13.4	7.7
1057	Longbranch, Filucy Bay	47 13	122 45	+0 26	+0 40	+2.1	+0.1	9.7	13.5	7.7
1058	Devils Head, Drayton Passage	47 10	122 46	+0 40	+0 50	+1.95	+1.10	10.0	14.2	8.1
1059	Henderson Inlet	47 09	122 50	+0 32	+0 49	+2.5	+0.2	10.0	14.0	8.0
1061	Vaughn, Case Inlet	47 20	122 46	+0 40	+0 51	+2.7	+0.2	10.2	14.1	8.1
1063	Allyn, Case Inlet	47 23	122 49	+0 26	+0 47	+2.7	0.0	10.2	14.1	8.1
1065	Walkers Landing, Pickering Passage	47 17	122 56	+0 40	+0 51	+2.9	+0.2	10.3	14.3	8.1
1067	Arcadia, Pickering Passage	47 12	122 56	+0 34	+0 55	+2.9	+0.2	10.4	14.4	8.2
1069	Shelton, Oakland Bay	47 13	123 05	+1 11	+1 55	-2.7	-0.2	10.6	14.2	7.9
1071	Burns Point, Totten Inlet	47 07	123 03	+0 41	+0 58	+3.5	+0.2	11.0	15.0	8.5
1073	Rocky Point, Eld inlet	47 04	123 01	+0 39	+0 56	+3.2	+0.3	10.6	14.7	8.4
1075	Dofflemeyer Point, Boston Harbor	47 08	122 54	+0 44	+0 57	+3.0	+0.3	10.4	14.4	8.3
1077	Olympia, Budd Inlet	47 03	122 54	+0 30	+0 47	+3.0	+0.2	10.5	14.4	8.2
	Possession Sound and Port Susan									
1079	Mukilteo	47 57	122 18	+0 13	+0 08	-0.4	-0.1	7.4	11.0	6.4
1081	Everett	47 59	122 13	-0 10	-0 10	-0.3	0.0	7.4	11.1	6.5
1083	Tulalip	48 04	122 17	+0 07	+0 02	-0.1	0.0	7.6	11.2	6.6
1085	Kayak Point	48 08	122 22	-0 05	+0 03	-0.5	-0.1	7.3	10.9	6.3
1087	Stanwood, Stillaguamish River <7>	48 14	122 22	+0 23	+2 14	*0.62	*0.29	5.7	7.4	3.6
	Saratoga Passage and Skagit Bay									
1088	Sandy Point	48 02	122 23	+0 03	-0 01	-0.1	0.0	7.6	11.2	6.6

Endnotes can be found at tne end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Saratoga Passage and Skagit Bay-Cont. Time meridian, 120°W					on SEATTLE, p.96				
1089	Holly Farms Harbor, Holmes Harbor	48 02	122 31	+0 01	-0 04	*1.01	*0.99	7.8	11.4	6.7
1090	Greenbank, Whidbey Island	48 06	122 34	+0 04	-0 04	-0.1	0.0	7.6	11.3	6.6
1091	Crescent Harbor, N. Whidbey Island	48 17	122 37	+0 04	-0 04	*1.03	*0.99	8.0	11.6	6.8
1092	Coupeville, Penn Cove	48 13	122 41	+0 04	+0 01	+0.1	0.0	7.8	11.5	6.7
1093	La Conner, Swinomish Channel <8>	48 23	122 30	+0 27	+0 38	*0.87	*0.93	6.5	10.0	5.9
1095	Ala Spit	48 24	122 35	+0 11	+0 28	*0.91	*0.91	6.9	10.5	6.1
1097	Yokeko Point, Deception Pass	48 25	122 37	+0 26	+0 38	-1.0	-0.2	6.9	10.5	6.1
1099	Cornet Bay, Deception Pass	48 24	122 37	+0 14	+0 27	*0.89	*0.89	6.6	10.2	6.0
	Rosario Strait, etc.					on PORT TOWNSEND, p.92				
1101	Reservation Bay, Fidalgo Island	48 25	122 40	-0 15	-0 05	*0.90	*0.90	4.5	7.6	4.7
1103	Aleck Bay, Lopez Island	48 26	122 51	-0 18	-0 08	*0.88	*0.88	4.2	7.4	4.6
1105	Burrows Bay (Allan Island)	48 28	122 42	+0 09	+0 03	*0.95	*0.88	5.0	8.1	4.8
1107	Anacortes, Guemes Channel	48 31	122 37	+0 22	+0 33	*0.96	*1.00	4.8	8.2	5.0
1109	Swinomish Channel ent., Padilla Bay	48 28	122 31	+0 36	+1 17	0.0	0.0	5.1	8.4	5.1
1111	Thatcher Pass	48 32	122 48	+0 31	+0 18	*0.96	*0.92	5.0	8.2	4.9
1113	Strawberry Bay, Cypress Island	48 34	122 43	+0 34	+0 52	*0.95	*0.95	4.8	8.0	4.9
1115	Peavine Pass	48 36	122 48	+0 34	+0 18	*0.98	*0.92	5.0	8.2	4.9
1117	Eagle Harbor, Cypress Island	48 35	122 42	+0 36	+0 48	*0.98	*0.92	5.0	8.2	4.9
	Bellingham Bay									
1119	Chuckanut Bay	48 40	122 30	+0 33	+0 53	0.0	-0.1	5.2	8.4	5.1
1121	Bellingham	48 45	122 30	+0 38	+1 10	*1.00	*0.97	5.2	8.5	5.1
	Hale Passage									
1123	Point Migley	48 45	122 43	+0 56	+0 51	+0.1	0.0	5.2	8.6	5.2
1124	Village Point, Lummi Island	48 43	122 43	+0 44	+1 11	*1.01	*1.01	5.2	8.6	5.2
1125	Rosario, East Sound, Orcas Island	48 39	122 52	+0 27	+1 04	*0.96	*0.96	4.9	8.1	4.9
1127	Upright Head, Lopez Island	48 34	122 53	+0 26	+0 44	*0.93	*0.93	4.6	7.8	4.8
1129	Orcas, Orcas Island	48 36	122 57	+0 33	+0 56	*0.90	*0.90	4.5	7.6	4.7
	San Juan Channel									
1131	Richardson, Lopez Island	48 27	122 54	-0 21	-0 11	*0.87	*0.87	4.2	7.3	4.5
1133	Friday Harbor, San Juan Island	48 33	123 00	+0 35	+0 56	*0.92	*0.92	4.5	7.7	4.8
	Strait of Georgia									
1135	Echo Bay, Sucia Islands	48 45	122 54	+1 01	+1 34	+0.1	0.0	5.2	8.6	5.2
1137	Ferndale	48 50	122 43	+0 49	+1 20	+0.5	0.0	5.6	9.0	5.4
1139	Blaine, Semiahmoo Bay	49 00	122 46	+0 59	+1 27	+0.9	+0.1	5.9	9.5	5.6
	Haro Strait									
1141	Kanaka Bay, San Juan Island	48 29	123 05	-0 11	-0 02	*0.86	*0.86	4.2	7.3	4.5
1143	Roche Harbor, San Juan Island	48 37	123 09	+0 29	+0 52	*0.90	*0.90	4.4	7.5	4.7
1145	Turn Point, Stuart Island	48 41	123 14	+0 24	+0 47	*0.90	*0.90	4.4	7.5	4.7
	Boundary Pass									
1147	Patos Island Wharf	48 47	122 58	+1 03	+1 30	+0.2	0.0	5.3	8.6	5.2
	BRITISH COLUMBIA Passages inside Vancouver Island <16>					on VICTORIA, p.100				
1149	Sooke, Vancouver Island	48 22	123 44	-0 11	-0 33	+0.8	+0.5	- -	6.4	6.6
1151	Esquimalt, Vancouver Island	48 26	123 26	+0 12	+0 17	0.0	-0.1	- -	6.2	6.3
1153	VICTORIA, Vancouver Island	48 26	123 23			Daily predictions		- -	6.1	6.3
						on VANCOUVER, p.104				
1155	Sidney, Haro Strait	48 39	123 24	-1 01	-1 12	*0.71	*0.61	- -	7.8	7.1
1157	Fulford Harbor, Saltspring Island	48 46	123 27	-0 55	-1 08	-3.5	-1.0	- -	8.0	7.6
1159	Active Pass, Mayne Island	48 52	123 20	-0 16	-0 30	-1.5	-0.8	- -	9.8	8.6
1161	Cowichan Bay	48 45	123 37	-0 53	-1 09	-3.0	-0.6	- -	8.0	8.1
1163	Chemainus, Stuart Channel	48 55	123 42	-0 51	-1 03	-2.2	-1.0	- -	9.3	8.3
1165	Ladysmith	48 59	123 47	-0 53	-1 02	-2.3	-0.8	- -	9.0	8.4
1167	Sand Heads, Fraser River	49 07	123 18	-0 25	-0 27	-1.2	-1.1	- -	10.4	8.7
1169	Atkinson Point, Burrard Inlet	49 19	123 15	-0 25	-0 27	-1.2	-1.1	- -	10.4	8.7
1171	VANCOUVER, Burrard Inlet	49 18	123 07			Daily predictions		- -	10.5	9.9
1173	Squamish, Howe Sound	49 41	123 10	-0 24	-0 24	-0.8	-1.2	- -	10.9	8.9
1175	Nanaimo	49 10	123 57	-0 20	-0 20	0.0	+0.1	- -	10.4	10.0
1177	Pender Harbor, Malaspina Strait	49 38	124 02	-0 22	-0 22	-1.1	-1.2	- -	10.6	8.8
1179	Comox, Baynes Sound	49 40	124 55	-0 18	-0 20	-0.4	-1.5	- -	11.6	9.0
1181	Whaletown, Cortes Island	50 06	125 03	-0 15	-0 17	+0.5	-0.2	- -	11.2	10.0
1183	Duncan Bay, Discovery Passage	50 05	125 18	-1 03	-1 16	-3.7	-1.5	- -	8.3	7.4
1185	Redonda Bay, Deer Passage	50 16	124 59	-0 07	-0 08	+1.2	+0.5	- -	11.2	10.8
1187	Yuculta, Cordero Channel	50 24	125 08	-0 59	-0 36	-0.2	+1.0	- -	9.3	10.4
1189	Waddington Harbor, Bute Inlet	50 56	124 51	-0 12	-0 08	+0.6	-0.4	- -	11.5	10.1
1191	Gowlland Harbor, Discovery Passage	50 04	125 14	-1 09	-1 18	-3.0	-0.9	- -	8.4	8.0
1193	Seymour Narrows (Canoe Pass)	50 08	125 21	-2 30	-3 30	0.0	+0.5	- -	10.0	10.0
1195	Owen Bay, Okisollo Channel	50 19	125 13	-3 01	-3 02	-1.4	-0.2	- -	9.3	8.9
						on SITKA, p.116				
1197	Turn Island, Johnstone Strait	50 21	125 29	+1 56	+2 02	+0.6	+0.9	- -	9.6	6.3
1199	Knox Bay, West Thurlow Island	50 24	125 36	+1 30	+1 40	+2.9	+3.1	- -	9.7	8.5
1201	Kelsey Bay, Johnstone Strait	50 24	125 58	+0 54	+1 05	+4.3	+3.6	- -	10.6	9.4
1203	Port Neville, Johnstone Strait	50 30	126 05	+0 54	+0 59	+5.1	+3.8	- -	11.2	9.8
1205	Port Harvey, Johnstone Strait	50 34	126 17	+0 38	+0 47	+4.0	+3.2	- -	10.7	8.9
1207	Chatham Channel (Root Point)	50 35	126 12	+0 43	+0 57	+5.1	+3.4	- -	11.6	9.5
1209	Glendale Cove, Knight Inlet	50 40	125 44	+0 21	+0 31	+6.6	+3.7	- -	12.8	10.6
1211	Farewell Harbor, Blackfish Sound	50 36	126 42	+0 37	+0 58	+3.9	+2.9	- -	10.9	8.5
1213	Blunden Harbor	50 54	127 17	+0 19	+0 20	+4.9	+3.3	- -	11.5	9.4

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal[1]	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	BRITISH COLUMBIA–Continued Time meridian, 120°W					on SITKA, p.116				
1215	Alert Bay, Cormorant Island	50 35	126 56	+0 29	+0 35	+4.8	+3.3	- -	11.4	9.4
1217	Port Hardy, Vancouver Island	50 43	127 29	+0 08	+0 14	+4.7	+3.3	- -	11.3	9.4
1219	Shushartie Bay, Goletas Channel	50 51	127 52	+0 02	+0 08	+4.0	+2.7	- -	11.2	8.7
	Vancouver Island, Southwest Coast									
1221	Port San Juan	48 33	124 25	-0 11	-0 10	(*0.65+3.4)		6.0	7.2	6.8
1223	Carmanah Point	48 37	124 45	-0 16	-0 14	(*0.75+2.3)		6.0	7.4	6.2
1225	Bamfield, Barkley Sound	48 50	125 08	-0 29	-0 23	(*0.86+2.5)		6.6	8.7	7.1
1227	Port Alberni	49 14	124 49	-0 20	-0 19	(*0.87+2.5)		6.7	8.6	7.1
1229	Clayoquot	49 09	125 55	-0 16	-0 11	+1.7	+2.4	7.0	8.8	7.3
1231	Riley Cove	49 23	126 13	-0 14	-0 09	+1.5	+2.3	6.9	8.8	7.2
1233	Nootka Sound	49 37	126 37	-0 14	-0 13	+1.2	+2.0	6.9	8.9	6.9
1235	Esperanza Inlet	49 52	126 43	-0 16	-0 11	+2.0	+1.9	7.4	9.4	7.2
1237	Kyuquot Sound	50 08	127 18	-0 11	-0 06	+1.8	+2.5	7.0	8.8	7.4
1239	Nasparti Inlet	50 06	127 43	-0 09	-0 05	+2.1	+2.6	7.2	9.1	7.6
1241	Klaskish Inlet	50 15	127 44	-0 06	-0 03	+2.1	+2.6	7.2	9.1	7.6
1243	Bergh Cove, Quatsino Sound	50 32	127 37	-0 06	-0 01	+2.7	+3.1	7.3	9.4	8.2
	Prince Rupert					on KETCHIKAN, p.108		Mean Spring		
	Slingsby Channel									
1245	Treadwell Bay	51 06	127 32	+0 34	+0 46	(*0.48+2.8)		6.3	7.9	6.6
	Rivers Inlet									
1247	Wadhams	51 31	127 31	+0 08	+0 15	(*0.68+3.3)		8.9	11.3	8.7
	Fitz Hugh Sound									
1249	Namu Harbor	51 52	127 52	+0 18	+0 21	(*0.69+3.0)		9.0	11.3	8.5
1251	Addenbroke Island	51 36	127 49	+0 09	+0 21	(*0.66+3.4)		8.6	10.9	8.7
	Fisher Channel									
1253	Ocean Falls	52 21	127 41	+0 09	+0 21	(*0.74+3.7)		9.5	12.0	9.6
	Campbell Island									
1255	Bella Bella, Lama Passage	52 08	128 08	+0 11	+0 17	(*0.70+3.7)		9.1	11.8	9.3
	Milbanke Sound									
1257	Port Blackney	52 19	128 21	+0 11	+0 19	(*0.72+3.1)		9.3	11.8	8.9
	North Bentinck Arm									
1259	Bella Coola	52 23	125 48	+0 14	+0 23	(*0.78+3.1)		10.1	13.0	9.3
	Finlayson Channel									
1261	Klemtu Passage	52 36	128 31	+0 14	+0 25	(*0.72+3.8)		9.3	11.6	9.6
1263	Carter Bay	52 50	128 24	+0 17	+0 23	(*0.78+3.1)		10.1	13.2	9.3
	Whale Channel									
1265	Barnard Harbor	53 05	129 07	+0 24	+0 35	+0.7	+2.8	10.9	13.9	9.8
	Wright Sound									
1267	Hartley Bay	53 26	129 15	+0 20	+0 31	+1.6	+3.4	11.2	14.3	10.5
	Douglas Channel									
1269	Kitimat	53 59	128 42	+0 24	+0 40	+2.4	+3.6	11.8	15.1	11.0
	Gardner Canal									
1271	Kemano Bay	53 31	128 07	+0 24	+0 40	+2.7	+3.6	12.1	15.6	11.2
	Grenville Channel									
1273	Lowe Inlet	53 33	129 35	+0 32	+0 44	+2.8	+4.0	11.8	14.9	11.4
	Principe Channel, etc.									
1275	Port Stephens	53 21	129 43	+0 22	+0 32	+0.5	+3.2	10.3	13.2	9.9
1277	Port Canaveral	53 35	130 09	+0 29	+0 38	+0.5	+3.2	10.3	13.2	9.9
1279	Beaver Passage	53 48	130 21	+0 38	+0 50	+3.7	+3.5	13.2	17.1	11.6
	Chatam Sound									
1281	Porcher Island	54 05	130 24	+0 34	+0 46	+3.6	+4.6	12.0	15.2	12.1
1283	Qlawdzeet Anchorage	54 12	130 46	+0 43	+0 49	+4.2	+4.3	12.9	16.6	12.3
1285	Prince Rupert	54 19	130 20	+0 51	+0 57	+4.6	+4.3	13.3	17.3	12.5
1287	Port Simpson	54 34	130 26	+0 51	+0 57	+3.9	+4.2	12.7	16.5	12.1
	Queen Charlotte Island									
1289	Skidegate Inlet	53 15	132 04	+1 01	+1 07	+5.5	+4.8	13.7	17.1	13.2
1291	Tasu Sound	52 45	132 01	+0 22	+0 29	(*0.58+3.6)		7.5	9.4	8.2
	BRITISH COLUMBIA and ALASKA Dixon Entrance									
	Graham Island, B.C.									
1293	Parry Passage	54 11	132 59	+0 20	+0 30	(*0.69+4.2)		8.9	11.2	9.5
1295	Miah Point	54 07	132 19	+0 36	+0 40	(*0.79+5.6)		10.3	12.9	10.3
1297	Masset Harbor	53 59	132 08	+1 01	+1 13	(*0.58+3.0)		7.6	9.5	7.6
	Time meridian, 135°W							Mean Diurnal[1]		
1299	Cape Muzon, Dall Island, Alaska	54 40	132 40	-0 15	-0 08	(*0.76+0.3)		9.9	12.1	6.4
1301	Nichols Bay, Alaska	54 43	132 08	-0 09	-0 08	-2.0	-0.1	11.1	13.4	6.9
1303	Cape Chacon, Alaska	54 42	132 01	-0 15	-0 05	-1.9	0.0	11.1	13.6	7.0
1305	Kelp Island Passage, Duke Island	54 53	131 18	-0 05	+0 01	-0.8	0.0	12.2	14.6	7.6
1307	Barren Island, Alaska	54 45	131 21	-0 16	-0 11	-1.4	0.0	11.6	13.9	7.3
1309	Cape Fox, Alaska	54 46	130 51	-0 17	-0 12	-0.8	-0.2	12.4	14.6	7.5
1311	Port Tongass, Tongass Island, Alaska	54 46	130 44	-0 17	-0 15	-0.8	-0.2	12.4	14.6	7.5
1313	Nakat Harbor, Alaska	54 49	130 42	0 00	+0 08	-0.7	-0.1	12.4	14.7	7.6
	Time meridian, 120°W									
1315	Haystack Island, B.C. <9>	54 43	130 37	+0 45	+0 49	-0.4	0.0	12.6	15.0	7.8

Endnotes can be found at the end of table 2.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Portland Canal, etc. Time meridian, 120°W			*	on KETCHIKAN, p.108					
1317	Wales Island (Cannery), Pearse Canal <9>	54 47	130 33	+0 57	+1 04	-0.1	0.0	12.9	15.3	7.9
1319	Kumeon Bay, B.C. <9>	54 43	130 14	+0 53	+0 56	+0.2	0.0	13.2	15.6	8.1
1321	Mill Bay, Nass River, B.C. <9>	55 00	129 54	+0 51	+1 17	+0.1	-0.1	13.2	15.5	8.0
	Time meridian, 135°W									
1323	Halibut Bay, Alaska <9>	55 14	130 06	-0 07	-0 05	+0.6	+0.2	13.4	16.0	8.4
	Time meridian, 120°W									
1325	Fords Cove, B.C. <9>	55 37	130 06	+0 56	+0 58	+0.8	+0.1	13.7	16.2	8.4
	Time meridian, 135°W									
1327	Davis River entrance, Alaska <9>	55 46	130 11	-0 03	0 00	+1.2	0.0	14.2	16.6	8.6
	Time meridian, 120°W									
1329	Stewart, B.C. <9>	55 55	129 48	+0 53	+0 56	+1.4	+0.1	14.3	16.8	8.7
	ALASKA Revillagigedo Channel Time meridian, 135°W									
1331	Morse Cove, Duke Island	54 55	131 15	+0 02	+0 14	-0.6	0.0	12.4	14.8	7.7
1333	Kah Shakes Cove	55 03	130 59	-0 04	+0 02	-0.4	0.0	12.6	15.0	7.8
1335	Boca de Quadra	55 07	130 48	-0 01	+0 04	-0.4	-0.1	12.7	15.0	7.7
1337	Mary Island Anchorage	55 06	131 12	-0 01	-0 08	0.0	0.0	13.0	15.4	8.0
1339	Mop Point, Thorne Arm	55 23	131 14	-0 13	-0 06	-0.2	0.0	12.8	15.2	7.9
1341	Hassler Harbor, Annette Island	55 13	131 26	-0 03	-0 04	+0.1	0.0	13.1	15.5	8.0
1343	Coon Island, George Inlet	55 28	131 30	-0 08	-0 08	-0.1	0.0	12.9	15.3	7.9
1345	Gnat Cove, Carroll Inlet	55 23	131 20	0 00	-0 07	0.0	0.0	13.0	15.4	8.0
1347	Nigelius Point, Carroll Inlet	55 34	131 22	-0 07	-0 08	0.0	0.0	13.0	15.4	8.0
	Tongass Narrows									
1349	KETCHIKAN	55 20	131 38			Daily predictions		13.0	15.4	8.0
1351	Ward Cove	55 24	131 44	-0 06	-0 03	+0.3	0.0	13.3	15.7	8.1
	Behm Canal									
1353	Alava Bay	55 14	131 08	-0 06	-0 04	-0.2	0.0	12.8	15.2	7.9
1355	Smeaton Bay (Wilson Arm)	55 22	130 38	+0 05	+0 08	+0.2	0.0	13.2	15.6	8.1
1357	Shoalwater Pass	55 26	130 55	-0 02	+0 01	+0.2	0.0	13.2	15.6	8.1
1359	Vallenar Point	55 26	131 51	-0 06	-0 08	-0.1	0.0	12.9	15.3	7.9
1361	Rudyerd Bay	55 38	130 39	0 00	+0 01	+0.3	0.0	13.3	15.7	8.1
1363	Fitzgibbon Cove	55 59	131 10	-0 06	-0 01	+0.4	0.0	13.4	15.8	8.2
1365	Burroughs Bay	56 02	131 06	-0 03	-0 01	+0.5	+0.1	13.4	15.8	8.3
1367	Bell Arm, Bell Island	55 58	131 31	-0 02	0 00	+0.6	0.0	13.6	15.9	8.1
1369	Convenient Cove, Hassler Island	55 52	131 41	-0 01	+0 01	+0.4	0.0	13.4	15.7	8.2
1371	Yes, Yes Bay	55 55	131 47	0 00	-0 01	+0.3	0.0	13.3	15.7	8.1
1373	Shrimp Bay	55 51	131 28	0 00	0 00	+0.5	0.0	13.5	15.9	8.2
1375	Traitors Cove (lower section)	55 43	131 40	+0 04	-0 02	+0.4	-0.1	13.5	15.8	8.1
1377	Traitors Cove (inside narrows)	55 44	131 37	+0 25	+1 26	+0.83	+0.47	11.3	12.9	6.3
1379	Loring, Naha Bay	55 36	131 38	-0 01	0 00	+0.4	0.0	13.4	15.7	8.2
1381	Tamgas Harbor, Annette Island	55 04	131 33	-0 13	-0 10	-0.3	-0.1	12.8	15.0	7.8
1383	Ingraham Bay, Prince of Wales Island	54 59	132 00	+0 02	+0 03	-1.0	0.0	12.0	14.4	7.5
1385	Menefee Anch., Prince of Wales Island	55 02	132 01	-0 03	+0 01	-0.9	-0.1	12.2	14.4	7.5
1387	Niblack Anchorage, Moira Sound	55 04	132 07	+0 02	+0 05	-0.8	0.0	12.2	14.6	7.6
1389	Metlakatla, Port Chester	55 08	131 34	-0 11	-0 07	-0.7	0.0	12.3	14.7	7.6
	Clarence Strait									
1391	Nehenta Bay, Gravina Island	55 10	131 48	-0 02	-0 01	-0.7	0.0	12.3	14.7	7.7
1393	Lancaster Cove, Cholmondeley Sound	55 13	132 06	+0 02	+0 01	-0.3	0.0	12.7	15.1	7.9
1395	Divide Head, Cholmondeley Sound	55 15	132 18	-0 09	-0 08	-0.3	0.0	12.7	15.1	7.9
	Kasaan Bay									
1397	Entrance	55 24	132 10	-0 02	-0 01	-0.1	-0.1	13.0	15.2	7.9
1399	Saltery Cove, Skowl Arm	55 24	132 19	+0 04	+0 02	-0.1	0.0	12.9	15.3	8.0
1401	Polk Inlet (south end)	55 22	132 29	+0 03	+0 06	+0.2	0.0	13.2	15.6	8.1
1403	Kasaan	55 32	132 24	+0 06	+0 01	0.0	0.0	13.0	15.4	8.0
1405	Karta Bay	55 34	132 35	+0 03	+0 04	+0.5	-0.1	13.6	15.8	8.2
1407	Hollis Anchorage	55 29	132 39	+0 02	-0 05	+0.2	+0.1	13.1	15.6	8.1
1409	Hadley, Lyman Anchorage	55 32	132 17	+0 10	+0 07	+0.5	-0.1	13.6	15.8	8.2
1411	Union Bay, Ernest Sound	55 45	132 12	+0 11	+0 17	+1.1	0.0	14.1	16.5	8.6
1413	Dewey Anchorage, Etolin Island	55 55	132 22	+0 13	+0 14	+0.6	-0.1	13.7	15.9	8.2
1415	Ratz Harbor, Prince of Wales Island	55 53	132 36	+0 13	+0 14	+0.6	-0.1	13.7	16.0	8.2
1417	Lake Bay	56 01	132 55	+0 09	+0 01	+0.5	-0.1	13.6	15.9	8.2
1419	Thorne Island, Whale Passage	56 04	132 58	-0 07	0 00	+0.2	0.0	13.2	15.6	8.1
1421	Exchange Cove	56 12	133 04	+0 08	+0 04	-0.4	-0.1	12.7	15.0	7.7
1423	Steamer Bay, Etolin Island	56 09	132 41	+0 08	+0 03	+0.9	-0.1	14.0	16.3	8.4
1425	Olive Cove, Zimovia Strait	56 11	132 19	+0 12	+0 14	+1.2	0.0	14.2	16.6	8.6
1427	Blake Island, Bradfield Canal	56 13	131 55	+0 10	+0 06	+1.1	-0.1	14.2	16.5	8.5
1429	Wrangell, Wrangell Island	56 28	132 23	+0 11	+0 02	+0.3	0.0	13.3	15.7	8.2
1431	Stikine River Entr., Point Rothsay	56 35	132 22	+0 27	+0 32	-1.5	+0.1	11.4	13.9	7.3

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
				on SITKA, p.116						
	Cordova Bay Time meridian, 135°W									
1433	Minnie Bay	54 43	132 18	-0 05	0 00	+2.7	+0.1	10.3	12.7	6.6
1435	Tah Bay	54 50	132 20	-0 04	+0 03	+2.6	+0.1	10.2	12.5	6.5
1437	Hunter Bay	54 52	132 19	-0 02	+0 03	+2.7	+0.1	10.3	12.7	6.6
1439	Kassa Inlet entrance	54 56	132 31	-0 03	+0 01	+2.6	+0.1	10.2	12.5	6.6
1441	Elbow Bay	54 54	132 39	-0 04	-0 04	+2.6	+0.1	10.2	12.6	6.6
1443	Mabel Island	55 00	132 36	-0 10	-0 01	+2.8	+0.1	10.4	12.8	6.7
1445	Keete Island, Nutkwa Inlets	55 03	132 35	-0 13	-0 05	+2.8	+0.1	10.4	12.8	6.7
1447	Keete Inlet	55 05	132 29	-0 11	-0 01	+2.9	+0.1	10.5	12.9	6.7
	Hetta Inlet									
1449	Mud Bay	55 05	132 38	-0 05	+0 01	+2.8	+0.1	10.4	12.8	6.7
1451	Copper Harbor	55 13	132 37	-0 10	-0 08	+2.8	+0.1	10.4	12.8	6.7
1453	Sulzer	55 17	132 37	-0 02	+0 08	+2.9	+0.1	10.5	12.9	6.7
	Kalgani Strait									
1455	Kalgani Harbor	54 45	132 43	-0 14	-0 08	+2.2	+0.1	9.8	11.9	6.4
1457	American Bay	54 51	132 50	+0 01	+0 01	+2.5	0.0	10.2	12.4	6.5
	Tlevak Strait									
1459	Rose Inlet	54 57	132 59	-0 07	+0 05	+2.8	0.0	10.5	12.6	6.6
1461	Kasook Inlet, Sukkwan Island	55 01	132 47	-0 13	-0 05	+2.8	0.0	10.5	12.6	6.6
1463	McFarland Islands	55 04	132 56	-0 08	-0 02	+2.7	+0.1	10.3	12.4	6.6
1465	View Cove	55 05	133 01	-0 02	+0 02	+2.8	0.0	10.5	12.7	6.6
1467	South Pass, Sukkwan Strait	55 10	132 52	-0 02	+0 02	+2.9	+0.1	10.5	12.9	6.8
1469	Saltery Point	55 11	132 48	-0 08	-0 05	+2.9	+0.1	10.5	12.9	6.8
1471	North Pass, West End	55 12	132 56	-0 12	-0 06	+3.0	+0.1	10.6	13.0	6.8
1473	Natalia Point	55 14	133 03	-0 05	+0 01	+2.9	+0.1	10.5	12.9	6.8
1475	Soda Bay	55 16	132 58	+0 03	+0 07	+3.0	+0.1	10.6	13.0	6.8
1477	Tlevak Narrows	55 16	133 07	-0 07	-0 01	+1.7	+0.1	9.3	11.7	6.2
	Dall Island, west coast									
	Cape Muzon (see Index)	54 40	132 40	- - -	- - -	- -	- -	- -	- -	- -
1479	Security Cove	54 45	132 51	-0 20	-0 24	+1.0	0.0	8.7	10.8	5.7
1481	Forrester Island	54 50	133 32	-0 20	-0 24	+0.9	-0.1	8.7	10.7	5.6
1483	Gooseneck Harbor	54 53	133 00	-0 22	-0 13	+0.8	0.0	8.5	10.7	5.6
1485	Sakie Bay	55 04	133 12	+0 01	+0 05	+0.3	0.0	8.0	10.3	5.4
1487	Sea Otter Harbor	55 07	133 10	-0 04	+0 04	-0.2	-0.1	7.6	9.7	5.1
	Meares Passage to Davidson Inlet									
	Meares Passage									
1489	Diver Islands	55 11	133 17	-0 11	-0 07	-0.1	-0.1	7.7	9.8	5.1
1491	Eagle Point	55 14	133 14	-0 09	-0 05	+0.2	-0.2	8.1	10.3	5.3
1493	Meares Island, south side	55 15	133 11	-0 08	-0 04	+0.6	-0.1	8.4	10.6	5.5
	Ulloa Channel									
1495	Ulloa Island	55 16	133 09	-0 07	-0 03	+0.7	-0.1	8.5	10.7	5.5
1497	Waterfall Cannery	55 18	133 15	-0 10	-0 09	+0.3	-0.1	8.1	10.2	5.3
1499	Cape Flores	55 21	133 19	-0 13	-0 09	-0.2	-0.1	7.6	9.7	5.1
	Bucareli Bay									
1501	Port Santa Cruz, Suemez Island	55 17	133 25	-0 16	-0 13	0.0	-0.1	7.8	9.9	5.2
1503	Diamond Point	55 24	133 20	-0 11	-0 07	0.0	-0.1	7.8	9.9	5.2
1505	Craig	55 29	133 09	-0 08	-0 05	+0.1	-0.1	7.9	10.0	5.2
1507	Cruz Pass, San Fernando Island	55 32	133 19	-0 15	-0 12	+0.1	-0.1	7.9	10.1	5.2
	Gulf of Esquibel									
1509	Steamboat Bay, Noyes Island	55 33	133 38	-0 20	-0 08	+0.2	-0.1	8.0	10.1	5.3
1511	Anguilla Island	55 41	133 35	-0 18	-0 14	+0.4	-0.1	8.2	10.3	5.4
1513	Warm Chuck Inlet, Tonowek Bay	55 44	133 30	-0 15	-0 11	+0.2	-0.1	8.0	10.2	5.3
	Davidson Inlet									
1515	Port Alice, Heceta Island	55 49	133 36	-0 20	-0 14	+0.9	0.0	8.6	10.6	5.7
1517	Karheen, Sea Otter Sound	55 49	133 19	-0 13	-0 09	+0.6	-0.1	8.4	10.6	5.5
1519	Tuxekan Passage (south end)	55 46	133 17	-0 07	-0 04	+0.8	-0.1	8.6	10.8	5.6
1521	Tuxekan, 0.5 mile south of	55 53	133 15	-0 17	-0 07	+0.9	-0.1	8.7	10.9	5.6
1523	Tuxekan Passage (north end)	55 55	133 17	-0 12	-0 04	+0.9	-0.1	8.7	10.8	5.6
1525	El Capitan Island	55 56	133 20	-0 11	-0 10	+0.9	-0.1	8.7	10.8	5.6
1527	Cyrus Cove, Sea Otter Sound	55 55	133 24	-0 16	-0 12	+1.1	0.0	8.8	10.9	5.8
1529	Marble Passage	55 57	133 26	-0 14	-0 09	+1.0	0.0	8.7	10.9	5.8
1531	Marble Island	56 00	133 28	-0 19	-0 15	+0.8	-0.1	8.6	10.7	5.7
1533	Holbrook, Kosciusko Island	56 02	133 30	-0 10	-0 06	+0.9	-0.1	8.7	10.8	5.7
1535	Edna Bay	55 57	133 40	-0 20	-0 08	+0.9	0.0	8.8	10.8	5.7
	Sumner Strait									
1537	Coronation Island	55 54	134 07	-0 16	-0 17	+0.8	0.0	8.5	10.7	5.6
1539	Pole Anchorage, Kosciusko Island	55 57	133 49	-0 22	-0 22	+1.4	-0.1	9.2	11.8	5.9
1541	Port McArthur, Kuiu Island	56 04	134 07	-0 11	-0 07	+0.6	-0.1	8.4	10.6	5.5
1543	Kell Bay, Affleck Canal, Kuiu Island	56 02	134 08	+0 01	+0 01	+1.3	0.0	9.0	11.2	5.9
1545	Point St. Albans	56 05	133 58	-0 17	-0 13	+1.4	0.0	9.1	11.3	6.0
1547	Shakan Bay Entrance	56 08	133 37	-0 13	-0 12	+1.8	0.0	9.5	11.7	6.2
1549	Shakan Strait, Kosciusko Island	56 08	133 28	-0 09	-0 10	+1.9	-0.1	9.7	11.7	6.2
1551	El Capitan Passage	56 04	133 19	-0 05	+0 02	+0.9	-0.1	8.7	10.8	5.6
1553	Port Beauclerc, Kuiu Island	56 17	133 57	-0 14	-0 12	+1.9	-0.1	9.7	11.9	6.2
1555	Port Protection, Prince of Wales Island	56 19	133 36	-0 13	-0 11	+2.4	0.0	10.1	12.4	6.4
1557	Reid Bay	56 23	133 53	-0 11	-0 19	+2.5	0.0	10.2	12.4	6.5
1559	Sumner Island	56 25	133 48	-0 19	-0 12	+2.6	0.0	10.3	12.6	6.6

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Sumner Strait-Continued Time meridian, 135°W					on KETCHIKAN, p.108				
1561	Red Bay, Prince of Wales Island	56 18	133 19	+0 03	+0 07	-0.8	0.0	12.2	14.6	7.6
1563	Level Islands	56 28	133 06	+0 03	+0 04	-0.4	0.0	12.6	15.0	7.8
1565	Butterworth Island, Duncan Canal	56 32	133 04	-0 04	+0 03	0.0	0.0	13.0	15.3	8.0
1567	Duncan Canal, Kupreanof Island	56 34	133 04	+0 15	+0 16	-0.2	-0.1	12.9	15.2	7.8
1569	Grief Island, Duncan Canal	56 37	133 03	+0 15	+0 12	+0.1	-0.1	13.2	15.4	8.0
1571	Castle Islands, Duncan Canal	56 39	133 09	+0 27	+0 12	+0.1	-0.1	13.2	15.5	8.0
1573	St.John Harbor, Zarembo Island	56 26	132 57	+0 09	+0 05	-0.7	-0.2	12.5	14.6	7.6
1575	Greys Island	56 31	132 33	+0 06	+0 04	+0.2	0.0	13.2	15.6	8.1
	Wrangell Narrows									
1577	Point Lockwood, Woewodski Island	56 33	132 58	+0 20	+0 15	+0.2	+0.1	13.1	15.7	8.1
1579	Finger Point, Lindenberg Peninsula	56 41	132 57	+0 29	+0 41	+1.2	0.0	14.2	16.7	8.6
1581	Anchor Point	56 38	132 56	+0 20	+0 35	+0.6	0.0	13.6	16.0	8.3
1583	Petersburg	56 49	132 57	+0 09	+0 26	+0.3	-0.1	13.4	15.7	8.1
	Keku Strait									
1585	Monte Carlo Island	56 32	133 46	+0 02	+0 03	-2.8	-0.1	10.3	12.5	6.6
1587	Seclusion Harbor, Kuiu Island	56 33	133 52	+0 05	+0 02	-3.0	-0.2	10.2	12.3	6.4
1589	Beck Island	56 39	133 43	+0 08	+0 31	-1.6	-0.1	11.5	13.8	7.1
1591	The Summit	56 41	133 44	+0 31	+0 37	+0.3	+0.1	13.2	15.7	8.2
1593	Entrance Island	56 49	133 47	+0 22	+0 31	-0.7	0.0	12.3	14.7	7.6
1595	Port Camden, Kuiu Island	56 44	133 55	+0 03	+0 04	-1.5	0.0	11.5	13.9	7.2
1597	Hamilton Bay, Kupreanof Island	56 55	133 50	+0 03	+0 04	-1.6	0.0	11.4	13.8	7.2
1599	Kake	56 58	133 56	+0 05	+0 12	-1.4	-0.1	11.7	14.0	7.3
	Frederick Sound					on JUNEAU, p.112				
1601	Dry Strait	56 37	132 34	-0 18	-0 03	-0.2	0.0	13.6	16.1	8.3
1603	Cosmos Point	56 40	132 37	-0 19	-0 14	-0.6	0.0	13.1	15.6	8.1
1605	Ideal Cove, Mitkof Island	56 40	132 38	-0 09	-0 05	-0.2	0.0	13.5	16.1	8.3
1607	Brown Cove	56 53	132 48	-0 14	-0 10	-0.3	-0.1	13.5	15.8	8.2
1609	Thomas Bay	57 00	132 47	+0 07	+0 07	-0.8	-0.1	13.0	15.4	8.0
1611	Portage Bay, Kupreanof Island	57 00	133 19	-0 19	-0 15	-0.7	0.0	13.0	15.5	8.1
1613	Cleveland Passage, Whitney Island	57 13	133 30	-0 01	+0 03	-1.2	-0.1	12.6	15.0	7.8
1615	Pybus Bay, Admiralty Island	57 18	134 08	+0 03	-0 02	-1.9	-0.1	11.9	14.3	7.4
1617	Eliza Harbor, Liesnoi Island	57 10	134 17	-0 19	-0 19	-1.9	-0.1	11.9	14.3	7.4
1619	Saginaw Bay, Kuiu Island	56 54	134 18	-0 24	-0 21	-2.2	-0.1	11.6	14.0	7.3
	Stephens Passage									
1621	Port Houghton, Robert Islands	57 18	133 28	-0 21	-0 17	-0.8	-0.1	13.0	15.4	8.0
1623	Hobart Bay	57 24	133 25	-0 06	+0 03	-1.1	-0.1	12.7	15.1	7.8
1625	Good Island, Gambier Bay	57 29	133 54	-0 03	+0 04	-1.4	-0.1	12.4	14.8	7.7
1627	Windham Bay	57 33	133 30	0 00	0 00	-1.1	-0.1	12.7	15.1	7.8
1629	Rasp Ledge, Seymour Canal	57 41	134 02	+0 06	+0 05	-0.7	+0.1	12.9	15.6	8.2
1631	Windfall Harbor, Seymour Canal	57 52	134 16	+0 14	+0 18	-0.2	0.0	13.5	16.0	8.3
1633	Holkham Bay, Wood Spit	57 43	133 35	+0 03	+0 06	-0.8	-0.1	13.0	15.4	8.0
1635	Port Snettisham, Point Styleman	57 58	133 53	-0 12	-0 06	-0.4	-0.1	13.4	15.8	8.2
1637	Taku Harbor	58 04	134 01	+0 06	+0 03	-0.7	-0.1	13.1	15.5	8.0
1639	Greely Point, Taku Inlet	58 13	134 04	-0 01	-0 04	-0.6	-0.1	13.2	15.7	8.1
1641	Taku Point, Taku Inlet	58 24	134 01	+0 14	+0 13	+0.4	0.0	14.1	16.7	8.6
1643	JUNEAU	58 18	134 25			Daily predictions		13.7	16.3	8.4
1645	Fritz Cove, Douglas Island	58 19	134 36	-0 01	+0 05	-0.3	-0.1	13.5	15.9	8.2
1647	Auke Bay	58 23	134 39	-0 06	-0 03	-0.4	0.0	13.3	15.9	8.2
	Lynn Canal									
1649	Funter, Funter Bay	58 15	134 54	0 00	+0 01	-1.1	0.0	12.6	15.1	7.9
1651	Barlow Cove, Mansfield Peninsula	58 20	134 53	-0 13	-0 06	-1.1	-0.3	12.9	15.0	7.8
1653	William Henry Bay	58 43	135 14	+0 02	+0 09	-0.5	0.0	13.2	15.7	8.2
1655	Pyramid Harbor, Chilkat Inlet	59 11	135 28	-0 13	-0 12	0.0	-0.2	13.9	16.3	8.3
1657	Haines Inlet	59 14	135 26	-0 09	-0 06	+0.5	0.0	14.2	16.8	8.7
1659	Skagway, Taiya Inlet	59 27	135 19	+0 01	+0 03	+0.4	0.0	14.1	16.7	8.7
	Chatham Strait					on SITKA, p.116				
1661	Port Alexander, Baranof Island	56 15	134 39	0 00	-0 05	+1.4	+0.1	9.0	11.4	6.0
1663	Port Conclusion, Baranof Island	56 15	134 40	-0 09	-0 05	+1.4	+0.1	9.0	11.4	6.0
1665	Port Walter, Baranof Island	56 23	134 40	+0 04	+0 13	+1.5	+0.1	9.1	11.5	6.0
1667	Table Bay, Kuiu Island	56 10	134 15	-0 15	-0 13	+1.1	0.0	8.8	11.1	5.8
1669	Port Malmesbury, Kuiu Island	56 18	134 14	+0 04	+0 13	+1.2	+0.1	8.8	11.2	5.9
1671	Tebenkof Bay, Kuiu Island	56 25	134 08	+0 04	+0 11	+1.8	+0.1	9.4	11.8	6.2
1673	Red Bluff Bay	56 51	134 43	-0 02	+0 12	+2.7	+0.2	10.2	12.7	6.7
1675	Security Bay, Kuiu Island	56 51	134 21	-0 05	-0 01	+3.6	+0.2	11.1	13.6	7.1
	Frederick Sound (see Index)	- - -	- - -	- - -	- - -	on JUNEAU, p.108 - -	- -	- -	- -	- -
1677	Baranof, Warm Spring Bay	57 05	134 50	-0 07	-0 04	-2.8	-0.1	11.0	13.4	7.0

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Chatham Strait-Continued Time meridian, 135°W			on JUNEAU, p.112						
1679	Whitewater Bay, Admiralty Island	57 14	134 36	-0 19	-0 15	-2.0	+0.3	11.4	13.9	7.6
1681	Kasnyku Bay	57 13	134 52	-0 10	-0 06	-2.4	-0.1	11.4	13.8	7.2
1683	Point Thatcher	57 25	134 51	-0 15	-0 11	-1.9	+0.2	11.6	14.2	7.6
	Peril Strait (see Index)	- - -	- - -	- - -	- - -	- -	- -	- -	- -	- -
1685	Killisnoo	57 28	134 34	-0 06	-0 04	-2.1	0.0	11.6	14.1	7.4
	Kootznahoo Inlet									
1687	Favorite Bay	57 29	134 33	+0 11	+0 15	-2.8	+0.3	10.6	13.0	7.2
1689	Mitchell Bay	57 32	134 24	+1 22	+1 31	*0.67	*0.62	9.2	11.0	5.6
1691	Freshwater Bay, Chichagof Island	57 51	135 01	-0 08	0 00	-1.5	+0.3	11.9	14.4	7.8
	Icy Strait (see Index)	- - -	- - -	- - -	- - -	- -	- -	- -	- -	- -
1693	Tenakee Springs, Tenakee Inlet	57 47	135 13	-0 04	+0 05	-1.6	-0.1	12.3	14.7	7.7
	Baranof Island, west coast			on SITKA, p.116						
1695	Cape Ommaney	56 10	134 40	-0 10	-0 06	0.0	+0.1	7.6	9.9	5.3
1697	Port Banks, Whale Bay	56 34	134 59	-0 09	-0 07	+0.1	+0.1	7.7	9.9	5.3
	Sitka Sound									
1699	Symonds Bay, Biorka Island	56 51	135 31	-0 15	-0 16	-0.1	0.0	7.6	9.8	5.2
1701	SITKA	57 03	135 20	Daily predictions				7.7	9.9	5.3
1703	Dog Point, Lisianski Peninsula	57 10	135 25	-0 04	0 00	+0.1	0.0	7.8	10.0	5.3
1705	Olga Point, Olga Strait	57 14	135 32	0 00	+0 14	0.0	0.0	7.7	9.9	5.3
	Kruzof Island									
1707	Shoals Point	57 02	135 38	-0 08	-0 13	-0.1	0.0	7.6	9.8	5.2
1709	Gilmer Bay	57 13	135 50	-0 06	-0 02	+0.4	+0.1	8.0	10.1	5.5
	Neva Strait									
1711	Whitestone Narrows	57 15	135 34	-0 01	+0 03	+0.1	0.0	7.8	9.9	5.3
1713	Zeal Point	57 17	135 36	0 00	+0 04	+0.3	0.0	8.0	10.1	5.4
	Salisbury Sound and Peril Strait									
1715	Klokachef Island	57 25	135 53	-0 10	-0 06	-0.1	+0.1	7.5	9.9	5.2
1717	Scraggy Point	57 20	135 43	-0 09	0 00	-0.1	+0.1	7.5	9.8	5.2
1719	Kakul Narrows	57 22	135 41	+0 04	+0 11	+0.1	0.0	7.8	10.0	5.3
1721	Haley Anchorage, Fish Bay	57 22	135 37	+0 03	+0 12	+0.2	+0.1	7.8	10.1	5.4
1723	Serguis Narrows	57 25	135 38	+0 17	+0 27	+3.3	+0.1	10.9	13.3	6.9
1725	Bear Bay	57 25	135 35	+0 18	+0 29	+3.7	+0.2	11.2	13.6	7.2
				on JUNEAU, p.112						
1727	Povorotni Island, Pogibshi Point	57 31	135 33	-0 09	+0 02	-1.3	-0.1	12.5	14.9	7.7
1729	Nismeni Cove	*57 34	135 25	-0 15	-0 03	-1.3	-0.1	12.5	15.0	7.7
1731	Point Elizabeth	57 31	135 17	-0 15	-0 05	-1.6	0.0	12.1	14.7	7.6
1733	Lindenburg Head	57 27	135 02	-0 15	-0 05	-1.8	0.0	11.9	14.5	7.5
1735	Fairway Island	57 27	134 53	-0 15	-0 05	-2.1	0.0	11.6	14.2	7.4
	Chichagof Island, west coast			on SITKA, p.116						
1737	Falcon Arm, Slocum Arm	57 33	135 56	-0 03	-0 02	+0.6	+0.2	8.1	10.2	5.6
1739	Elbow Passage, Klag Bay	57 37	136 05	+0 10	+0 18	+0.8	+0.1	8.4	10.7	5.7
1741	Kimshan Cove, Ogden Passage	57 41	136 06	+0 07	+0 11	+0.2	+0.1	7.8	10.1	5.4
1743	Dry Pass, Hill Island	57 46	136 17	+0 01	+0 05	+0.2	0.0	7.9	10.2	5.3
	Lisianski Strait and Inlet									
1745	Canoe Cove, North Pass	57 51	136 25	+0 04	+0 04	+0.1	-0.1	7.9	10.1	5.2
1747	Stag Bay	57 55	136 18	+0 06	+0 06	+0.2	0.0	7.9	10.2	5.3
1749	Miner Island	58 01	136 20	-0 06	-0 01	+0.4	0.0	8.1	10.4	5.5
	Yakobi Island, outer coast									
1751	Takanis Bay	57 55	136 31	-0 02	+0 04	0.0	+0.1	7.6	10.1	5.3
1753	Surge Bay	58 01	136 32	+0 02	+0 07	-0.2	0.0	7.5	9.9	5.1
	Cross Sound									
1755	Cape Bingham	58 05	136 34	+0 02	+0 06	+0.4	0.0	8.1	10.3	5.4
1757	Cape Spencer	58 12	136 40	+0 01	+0 05	+0.5	+0.1	8.1	10.3	5.5
1759	Granite Cove	58 12	136 24	+0 01	+0 04	+1.1	+0.1	8.7	11.0	5.8
1761	Port Althorp	58 12	136 21	-0 01	+0 06	+0.9	0.0	8.6	10.9	5.8
1763	Inian Cove, North Inian Pass	58 16	136 20	+0 11	+0 11	+1.5	0.0	9.2	11.5	6.0
1765	Point Lavinia, South Inian Pass	58 13	136 21	+0 06	+0 10	+1.8	0.0	9.5	11.9	6.1
	Icy Strait									
1767	Idaho Inlet	58 13	136 09	+0 09	+0 13	+1.9	0.0	9.6	12.0	6.2
1769	Lemesurier I. Light, North Passage	58 19	136 02	+0 10	+0 14	+2.6	+0.1	10.2	12.6	6.6
1771	Mud Bay, Goose Island	58 13	136 02	+0 08	+0 11	+2.9	0.0	10.6	12.9	6.7
				on JUNEAU, p.112						
1773	Point Adolphus	58 17	135 47	-0 03	+0 01	-1.8	-0.1	12.0	14.5	7.5
1775	Flynn Cove	58 12	135 35	-0 05	-0 01	-1.4	-0.1	12.4	15.0	7.7
1777	Excursion Inlet	58 30	135 29	+0 02	+0 03	-1.3	0.0	12.4	14.8	7.8
1779	Hoonah Harbor, Port Frederick	58 08	135 28	+0 01	+0 03	-1.4	-0.1	12.4	14.8	7.7
1781	Swanson Harbor	58 13	135 08	+0 04	+0 09	-1.1	0.0	12.6	15.1	7.9

Endnotes can be found at the end of table 2.

best copy available

NO.	PLACE	POSITION Lat. N	POSITION Long. W	DIFFERENCES Time: High water	DIFFERENCES Time: Low water	DIFFERENCES Height: High water	DIFFERENCES Height: Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′	° ′	h. m.	h. m.	ft	ft	ft	ft	ft
	Icy Strait-Continued Time meridian, 135°W				on JUNEAU, p.112					
	Glacier Bay									
1783	Bartlett Cove	58 27	135 53	+0 11	+0 12	-1.6	0.0	12.1	14.6	7.7
1785	Willoughby Island	58 36	136 07	+0 24	+0 36	-0.2	+0.1	13.4	16.0	8.4
1787	Muir Inlet	58 55	136 07	+0 29	+0 39	+0.3	+0.1	13.9	16.5	8.6
1789	Composite Island	58 53	136 34	+0 28	+0 37	+0.3	+0.1	13.9	16.5	8.6
	Gulf of Alaska				on SITKA, p.116					
1791	Graves Harbor	58 16	136 41	+0 06	+0 12	0.0	+0.1	7.6	10.0	5.3
1793	Dixon Harbor	58 23	136 52	+0 09	+0 12	-0.1	0.0	7.6	9.9	5.2
1795	Lituya Bay, 2 miles inside entrance	58 37	137 37	+0 08	+0 41	-0.3	-0.1	7.5	9.7	5.0
1797	Dry Bay	59 10	138 37	+0 08	+0 12	0.0	0.0	7.7	9.8	5.2
1799	Yakutat, Yakutat Bay	59 33	139 44	+0 16	+0 17	+0.1	-0.1	7.8	10.1	5.3
1800	Johnstone Passage, Yakutat Bay	59 35	139 42	+0 16	+0 19	*1.00	*0.96	7.8	10.0	5.3
1801	Redfield Cove, Yakutat Bay	59 37	139 35	+0 16	+0 16	*1.00	*0.88	7.8	10.0	5.2
1802	Point Latouche, Yakutat Bay	59 54	139 38	+0 21	+0 19	*1.00	*0.89	7.8	10.0	5.2
1803	Icy Bay	59 53	141 28	+0 17	+0 19	-0.1	0.0	7.6	9.9	5.2
1804	Tyndall Glacier, Icy Bay	60 05	141 16	+0 35	+0 33	-0.3	-0.1	7.5	9.7	5.1
1805	Wingham Island, Controller Bay	60 03	144 24	+0 20	+0 24	0.0	0.0	7.7	10.1	5.2
					on CORDOVA, p.120					
	Copper River Delta									
1807	Kokinhenik Island <10>	60 18	145 05	+0 08	- - -	- -	- -	- -	- -	- -
1809	Pete Dahl Slough	60 23	145 24	+0 06	+0 38	-2.4	0.0	7.7	10.0	5.3
1811	Eyak River entrance	60 28	145 40	+0 14	+0 58	-1.6	-0.1	8.6	10.8	5.7
1813	Middleton Island (north end)	59 28	146 19	-0 21	-0 14	-2.2	-0.1	8.0	10.3	5.4
	Prince William Sound									
	Orca Inlet									
1815	Shag Rock	60 28	145 59	-0 11	-0 16	-1.1	-0.1	9.1	11.4	6.0
1817	Gravel Point	60 28	145 58	+0 01	+0 31	-0.1	0.0	10.0	12.3	6.5
1819	CORDOVA	60 34	145 45		Daily predictions			10.1	12.5	6.5
1821	Orca	60 35	145 43	+0 01	+0 01	-0.2	0.0	9.9	12.4	6.4
1823	Windy Bay, Hawkins Island	60 34	145 58	-0 08	-0 01	-0.5	0.0	9.6	12.1	6.3
1825	Comfort Cove, Port Gravina	60 43	146 05	-0 16	-0 06	-0.7	-0.1	9.5	11.8	6.2
	Hinchinbrook Island									
1827	Johnstone Point	60 29	146 37	-0 07	+0 02	-0.8	-0.1	9.4	11.8	6.1
1829	Port Etches	60 20	146 33	-0 09	+0 01	-1.3	-0.2	9.0	11.2	5.8
	Montague Island									
1831	Patton Bay	59 54	147 26	-0 12	-0 05	-2.3	-0.1	7.9	10.2	5.3
1833	Macleod Harbor	59 53	147 46	-0 33	-0 16	-1.4	-0.1	8.8	11.0	5.8
1835	Hanning Bay	59 57	147 41	-0 08	-0 05	-1.0	-0.1	9.2	11.5	6.0
1837	Port Chalmers	60 14	147 14	+0 03	+0 07	-0.8	0.0	9.3	11.7	6.1
1839	Gibbon Anchorage, Green Island	60 16	147 26	-0 21	-0 06	-0.8	-0.2	9.5	11.5	6.1
1841	Latouche, Latouche Island	60 03	147 54	-0 05	-0 02	-1.0	0.0	9.1	11.5	6.0
1843	Sawmill Bay, Evans Island	60 03	148 04	-0 03	+0 03	-1.2	0.0	8.9	11.3	5.9
1845	Snug Harbor, Knight Island	60 14	147 43	-0 06	-0 04	-0.8	-0.1	9.4	11.7	6.1
1847	Port Audrey, Knight Island	60 20	147 46	-0 04	-0 01	-0.4	+0.1	9.6	12.1	6.4
1849	Smith Island	60 32	147 19	-0 05	-0 04	-0.8	-0.1	9.4	11.8	6.1
1851	Snug Corner Cove, Port Fidalgo	60 44	146 39	-0 07	-0 06	-0.6	0.0	9.5	12.0	6.2
1853	Landlocked Bay, Port Fidalgo	60 51	146 32	-0 12	-0 08	-0.7	-0.1	9.5	11.9	6.1
					on VALDEZ, p.124					
	Valdez Arm									
1855	Litamar, Tatitlek Narrows	60 54	146 42	-0 26	-0 27	-0.1	0.0	9.5	11.9	6.2
1857	Rocky Point	60 57	146 46	-0 02	-0 05	0.0	0.0	9.6	12.1	6.3
1859	Jack Bay	61 02	146 38	-0 03	-0 04	0.0	0.0	9.6	12.1	6.3
1861	VALDEZ, Port Valdez	61 08	146 22		Daily predictions			9.7	12.1	6.3
					on CORDOVA, p.120					
1863	Jackson Cove, Glacier Island	60 53	147 14	-0 10	-0 02	-0.6	0.0	9.5	11.9	6.2
1865	Naked Island, McPherson Passage	60 40	147 24	-0 18	-0 08	-0.7	-0.1	9.5	11.8	6.1
1867	Kings Bay, Port Nellie Juan	60 32	148 28	-0 01	+0 09	-0.6	0.0	9.5	11.9	6.2
1869	Culross Bay, Wells Passage	60 44	148 11	-0 15	-0 01	-0.4	0.0	9.7	12.1	6.3
1871	Long Bay Entrance, Culross Passage	60 42	148 16	+0 03	+0 09	-0.9	-0.1	9.3	11.6	6.1
1873	Whittier, Passage Canal	60 47	148 40	-0 05	+0 01	-0.3	0.0	9.8	12.3	6.4
1875	Applegate Island	60 38	148 10	-0 01	+0 06	-0.6	0.0	9.5	11.9	6.2
1877	Eshamy Bay, Knight Island Passage	60 27	147 59	+0 01	+0 04	-0.4	0.0	9.7	12.1	6.4
1879	Chenega Island, Dangerous Passage	60 20	148 09	-0 01	+0 06	-0.9	0.0	9.2	11.6	6.1
1881	Hogg Bay, Port Bainbridge	60 04	148 12	-0 12	-0 03	-1.9	-0.1	8.3	10.6	5.5
	Kenai Peninsula, outer coast									
1883	Day Harbor	60 01	149 03	-0 11	-0 02	-2.0	-0.1	8.2	10.5	5.5
1885	Seward, Resurrection Bay	60 07	149 26	-0 09	-0 03	-1.9	-0.1	8.3	10.6	5.5
1887	Camp Cove, Aialik Bay	59 42	149 45	-0 12	-0 07	-1.9	-0.2	8.4	10.7	5.5
1889	Two Arm Bay	59 40	150 06	-0 19	-0 07	-1.6	-0.2	8.7	11.0	5.7
1891	Chance Cove (Lagoon)	59 29	150 19	-0 09	-0 01	-1.5	-0.1	8.7	11.0	5.7

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Kenai Peninsula, outer coast-Cont. Time meridian, 135°W			on CORDOVA, p.120						
1893	Beauty Bay, Nuka Bay	59 31	150 38	+0 03	+0 12	-1.1	-0.1	9.1	11.4	5.9
1895	Nuka Passage	59 24	150 40	+0 02	+0 10	-1.0	-0.1	9.2	11.5	6.0
1897	Takoma Cove, Port Dick	59 15	150 59	+0 14	+0 16	-0.4	-0.1	9.8	12.1	6.3
1899	Picnic Harbor, Rocky Bay	59 15	151 26	+0 17	+0 19	+0.3	-0.1	10.5	12.7	6.6
	Cook Inlet			on SELDOVIA, p.128						
1901	Ushagat Island, Barren Islands	58 57	152 16	-0 08	-0 04	*0.76	*0.76	11.4	13.7	7.2
1903	Port Chatham	59 13	151 44	-0 28	-0 34	*0.78	*0.92	11.9	14.3	7.5
1905	Port Graham	59 21	151 49	-0 08	-0 14	-1.0	0.0	14.5	16.9	8.9
1906	Tutka Bay,Kachemak Bay	59 26	151 21	-0 01	-0 01	+0.2	0.0	15.7	18.1	9.5
1907	SELDOVIA, Kachemak Bay	59 27	151 43	Daily predictions				15.5	18.0	9.4
1908	Sadie Cove, Kachemak Bay	59 29	151 22	-0 04	-0 04	+0.1	-0.1	15.6	18.0	9.4
1909	Halibut Cove, Kachemak Bay	59 36	151 13	-0 03	-0 05	+0.7	0.0	16.2	18.7	9.7
1910	Homer, Kachemak Bay	59 38	151 27	-0 10	-0 01	+0.2	-0.1	15.7	18.1	9.5
1911	Bear Cove, Kachemak Bay	59 44	151 01	-0 04	-0 05	+0.4	-0.1	16.0	18.4	9.6
1912	Anchor Point	59 46	151 53	+0 29	+0 21	+0.4	0.0	15.9	18.3	9.6
1913	Cape Ninilchik	60 01	151 43	+0 41	+0 54	+1.2	+0.2	16.5	19.1	10.1
1914	Ninilchik	60 03	151 40	+0 41	+1 04	+1.2	0.0	16.7	19.1	10.0
1915	Kenai River entrance	60 33	151 17	+1 52	+2 18	+2.7	+0.5	17.7	20.7	11.0
1917	Kenai City Pier	60 33	151 14	+1 54	+2 55	+1.9	-0.1	17.5	19.8	10.4
				on NIKISHKA, p.132						
1919	NIKISHKA	60 41	151 24	Daily predictions				17.7	20.5	10.9
				on SELDOVIA, p.128						
1921	East Foreland	60 43	151 25	+2 37	+2 58	+3.0	+0.5	18.0	21.0	11.2
				on ANCHORAGE, p.136						
1923	Fire Island	61 10	150 12	-0 25	-0 28	*0.94	*0.94	24.4	27.0	14.2
1925	Sunrise, Turnagain Arm <11>	60 54	149 26	+0 32	+1 12	+4.2	-0.2	30.3	33.3	17.1
1927	ANCHORAGE, Knik Arm	61 14	149 53	Daily predictions				25.9	28.8	15.2
1929	Eklutna, Knik Arm <12>	61 28	149 22	+1 11	- - -	- - -	- - -	- -	- -	- -
				on SELDOVIA, p.128						
1931	North Foreland	61 03	151 10	+3 47	+4 06	(*1.18+0.2)		18.3	21.0	11.3
1933	Drift River Terminal	60 34	152 08	+1 39	+2 04	*1.01	*1.18	15.4	18.1	9.7
1935	Tuxedni Channel	60 09	152 38	+0 39	+0 53	-1.3	+0.2	14.0	16.6	8.9
1937	Snug Harbor	60 06	152 34	+1 04	+1 15	-2.3	0.0	13.2	15.7	8.3
1938	Oil Bay, Kamishak Bay	59 38	153 16	+1 15	+1 16	*0.77	*0.83	12.6	13.9	7.3
1939	Iliamna Bay	59 37	153 35	+0 12	+0 16	*0.80	*0.82	12.3	14.5	7.5
1941	Nordyke Island, Kamishak Bay	59 11	154 05	+0 10	+0 22	-2.8	-0.2	12.9	15.2	8.0
	Kodiak and Afognak Islands			on KODIAK, p.140						
1943	Andreon Bay, Shuyak Island	58 31	152 25	+0 39	+0 48	+2.8	+0.4	9.0	11.3	5.9
1945	Perenosa Bay	58 21	152 27	+0 32	+0 42	+2.8	+0.4	9.0	11.3	5.9
1947	Seal Bay	58 22	152 15	+0 33	+0 39	+2.7	+0.4	8.9	11.2	5.8
1949	Tonki Bay	58 19	152 04	+0 16	+0 24	+2.6	+0.3	8.9	11.2	5.8
1951	Marmot Island, Marmot Strait	58 14	151 52	+0 22	+0 10	+1.2	+0.1	7.7	9.8	4.9
1953	Izhut Bay	58 13	152 19	+0 16	+0 24	+0.4	+0.1	6.9	8.9	4.5
1955	Kazakof Bay, Marmot Bay	58 08	152 34	+0 08	+0 09	+0.9	+0.3	7.2	9.4	4.9
1957	Fox Bay, Whale Island	57 59	152 45	+0 27	+0 40	+1.5	+0.3	7.8	10.0	5.2
1959	Kizhuyak Bay	57 49	152 54	+0 10	+0 14	+1.1	+0.1	7.6	9.6	4.9
1961	Kizhuyak Point	57 54	152 39	+0 09	+0 12	+0.9	+0.2	7.3	9.4	4.8
1963	Ouzinkie, Spruce Island	57 55	152 30	-0 01	-0 01	+0.5	+0.1	7.0	9.1	4.6
1965	Spruce Island (north side)	57 56	152 26	+0 06	+0 11	+0.7	+0.2	7.1	9.2	4.7
1967	KODIAK, Kodiak Harbor	57 47	152 24	Daily predictions				6.6	8.5	4.3
1969	St. Paul Harbor	57 44	152 29	-0 07	-0 03	+0.2	+0.1	6.7	8.7	4.4
1971	Womens Bay	57 43	152 31	+0 04	+0 01	+0.3	+0.1	6.8	8.8	4.5
1973	Ugak Bay (Saltery Cove)	57 29	152 44	-0 25	-0 17	0.0	0.0	6.6	8.4	4.3
1975	Port Hobron, Sitkalidak Island	57 10	153 09	-0 14	-0 03	0.0	+0.2	6.4	8.3	4.4
1977	Three Saints Bay	57 07	153 31	-0 18	-0 10	+0.1	+0.2	6.5	8.3	4.4
1979	Jap Bay	56 58	153 42	-0 13	-0 06	0.0	+0.2	6.4	8.2	4.4
1981	Sitkinak Lagoon	56 30	154 08	-0 16	+0 10	-0.7	+0.3	5.6	7.5	4.1
1983	Lazy Bay, Alitak Bay	56 54	154 15	+0 02	+0 18	*1.41	*1.41	9.3	11.7	6.2
1985	Moser Bay (Trap Point)	57 00	154 09	+0 13	+0 32	*1.39	*1.39	9.3	11.6	6.2
1987	Olga Bay (A. P. A. Cannery)	57 10	154 14	+3 48	+4 16	*0.14	*0.14	1.0	1.4	0.6
				on SELDOVIA, p.128						
	Uyak Bay									
1989	Uyak	57 38	154 00	-0 16	-0 01	*0.77	*0.77	11.3	13.8	7.3
1991	Larsen Bay	57 32	154 00	-0 14	-0 01	-4.4	-0.1	11.2	13.7	7.2
1993	Mining Camp	57 28	153 49	-0 37	-0 10	-4.1	-0.1	11.5	13.9	7.3
1995	Zachar Bay	57 33	153 44	-0 09	0 00	*0.77	*0.77	11.3	13.8	7.3
	Uganik Bay									
1997	Village Islands	57 47	153 33	-0 15	-0 02	*0.80	*0.80	11.7	14.4	7.5
1999	Northeast Arm	57 44	153 20	-0 12	-0 01	*0.77	*0.77	11.4	13.9	7.3
2001	Uganik Passage	57 48	153 18	-0 07	+0 02	*0.81	*0.81	11.9	14.6	7.6

Endnotes can be found at the end of table 2.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Kodiak and Afognak Islands-Cont. Time meridian, 135°W				on SELDOVIA, p.128					
2003	Viekoda Bay	57 54	153 10	-0 11	-0 03	*0.80	*0.80	11.8	14.4	7.6
	Kupreanof Strait									
2005	Onion Bay	58 03	153 14	0 00	-0 01	*0.80	*0.80	11.8	14.1	7.6
2007	Dry Spruce Island	57 57	153 02	+0 02	+0 13	*0.77	*0.77	11.4	13.9	7.4
2009	Nachaini Island	57 59	152 56	+0 10	+0 24	*0.76	*0.76	11.2	13.6	7.2
2011	Uzkosti Point	57 56	152 49	-0 43	+0 34	*0.64	*0.64	8.8	11.6	6.2
2013	Dolphin Point, Raspberry Strait	58 07	153 09	-0 25	-0 05	-4.1	-0.1	11.5	14.0	7.3
2015	Malina Bay, Shelikof Strait	58 11	152 57	-0 14	0 00	*0.81	*0.81	12.0	14.5	7.7
2017	Redfox Bay, Shuyak Strait	58 27	152 36	-0 14	-0 02	-4.4	-0.2	11.3	13.7	7.2
	Shuyak Island									
2019	Big Bay	58 33	152 37	+0 10	+0 15	*0.77	*0.77	11.5	13.9	7.3
2021	Carry Inlet	58 35	152 31	+0 06	+0 07	*0.73	*0.73	10.7	13.1	6.9
	Alaska Peninsula									
2023	Kukak, Kukak Bay	58 20	154 07	-0 08	+0 05	*0.74	*0.74	11.1	13.3	6.9
2025	Katmai Bay, Shelikof Strait	58 00	154 59	-0 14	+0 01	*0.71	*0.71	10.5	12.8	6.6
2027	Puale Bay	57 42	155 23	-0 22	-0 03	*0.67	*0.67	9.8	12.1	6.4
					on KODIAK, p.140					
2029	Kanatak Lagoon, Portage Bay	57 31	156 04	+0 25	+0 54	+3.3	+0.4	9.5	11.8	6.1
2031	Lees Cabins, Wide Bay	57 26	156 18	+0 25	+0 35	+3.5	+0.3	9.8	11.9	6.2
2033	Anchorage Bay	56 18	158 24	+0 23	+0 43	+0.5	+0.4	6.7	8.9	4.7
2035	Three Star Point	55 54	159 10	+0 32	+0 40	*0.93	*0.93	5.7	7.9	4.2
2037	Chiachi Island (east side)	55 51	159 06	+0 26	+0 40	*0.92	*0.92	5.6	7.8	4.2
2039	Kupreanof Harbor, Paul Island	55 47	159 21	+0 23	+0 38	*0.92	*0.92	5.6	7.8	4.2
2041	Fox Bay, Kupreanof Peninsula	55 38	159 37	+0 22	+0 36	*0.89	*0.89	5.5	7.6	4.0
2043	Dent Point, Stepovak Bay	55 47	159 53	+0 21	+0 36	*0.89	*0.89	5.5	7.6	4.0
	Shumagin Islands									
2045	Korovin Island (east side)	55 24	160 09	+0 26	+0 52	*0.92	*0.92	5.6	7.8	4.2
2047	Sanborn Harbor, Nagai Island	55 09	159 59	+0 37	+0 37	*0.86	*0.86	5.2	7.2	3.9
2049	Mist Harbor, Nagai Island	55 08	159 51	+0 35	+0 38	*0.83	*0.83	5.1	7.0	3.7
2051	Pirate Cove, Popof Island	55 22	160 22	+0 42	+0 43	*0.88	*0.88	5.4	7.4	4.0
2053	Sand Point, Popof Island	55 20	160 30	+0 30	+0 42	*0.87	*0.87	5.2	7.3	4.0
2055	Zachary Bay, Unga Island	55 20	160 37	+0 34	+0 49	*0.88	*0.88	5.4	7.5	4.0
2057	Albatross Anchorage, Balboa Bay	55 35	160 37	+0 32	+0 43	*0.91	*0.91	5.5	7.6	4.1
2059	Beaver Bay	55 28	160 50	+0 37	+0 42	*0.87	*0.87	5.2	7.3	4.0
2061	Seal Cape, Coal Bay	55 22	161 20	+0 34	+0 45	*0.84	*0.84	5.0	7.0	3.9
2063	Ukolnoi Island	55 16	161 32	+0 41	+0 40	*0.83	*0.83	5.0	7.0	3.8
2065	Dolgoi Harbor, Dolgoi Island	55 07	161 48	+0 44	+0 40	*0.79	*0.79	4.7	6.7	3.6
2067	Settlement Point, Pavlof Bay	55 30	161 28	+0 43	+0 48	*0.84	*0.84	5.2	7.2	3.8
2069	Canoe Bay, Pavlof Bay	55 35	161 16	+1 36	+1 30	*0.76	*0.76	4.6	6.5	3.5
2071	King Cove	55 04	162 19	+0 40	+0 42	*0.80	*0.80	4.8	6.8	3.7
2073	Lenard Harbor, Cold Bay	55 07	162 23	+0 46	+0 57	*0.85	*0.85	5.1	7.2	3.8
2075	Cold Bay	55 12	162 42	+0 49	+1 03	*0.84	*0.84	5.2	7.1	3.8
2077	Morzhovoi Bay	55 01	162 58	+0 50	+0 43	*0.80	*0.80	4.7	6.8	3.6
	Sanak Islands									
2079	Peterson Bay	54 24	162 38	+0 29	+0 32	*0.73	*0.73	4.0	6.2	3.4
2081	Sanak Harbor	54 29	162 49	+0 48	+0 43	*0.78	*0.78	4.4	6.6	3.6
	Aleutian Islands									
	Unimak Island									
2083	Dora Harbor	54 42	163 16	+0 49	+0 55	*0.77	*0.77	4.3	6.5	3.5
2085	Ikatan Bay	54 45	163 19	+0 43	+0 45	*0.78	*0.78	4.6	6.5	3.6
					on UNALASKA, p.144					
2087	False Pass, Isanotski Strait	54 52	163 24	-1 47	-2 25	*1.02	*1.19	2.1	4.1	2.4
2089	St. Catherine Cove	55 01	163 30	+0 04	-0 18	*1.23	*1.36	2.6	4.7	2.9
2091	Cape Mordvinof	54 56	164 28	+0 26	+0 19	*1.73	*1.36	4.3	6.4	3.7
2093	Cape Sarichef	54 36	164 55	-0 24	-0 56	*1.37	*1.27	3.2	5.0	3.1
2095	Scotch Cap	54 24	164 44	-2 27	-2 49	*1.40	*1.27	3.3	5.4	3.1
2097	Tigalda Bay, Tigalda Island	54 07	164 59	-1 53	-2 04	*0.82	*0.85	1.8	3.3	1.9
2099	Trident Bay, Akun Island	54 08	165 32	-3 59	-4 11	*0.99	*0.76	2.5	4.1	2.1
2101	Akun Bay, Akun Island	54 14	165 32	-0 02	-0 34	*0.79	*0.93	1.6	3.0	1.9
2103	Akutan Harbor, Akutan Island	54 08	165 48	-0 17	-0 07	*1.08	*1.10	2.4	3.9	2.5
2105	Malga Bay, Unalga Island	53 59	166 10	-0 18	-1 05	*0.85	*0.93	1.8	3.3	2.0
	Unalaska Island									
2107	English Bay	53 56	166 15	+0 16	-0 01	*0.79	*0.76	1.8	3.0	1.8
2109	Dutch Harbor, Amaknak Island	53 54	166 32	0 00	-0 07	*1.00	*1.00	2.2	3.7	2.3
2111	UNALASKA	53 53	166 32		Daily predictions			2.2	3.7	2.3
2113	Anderson Bay	53 41	166 50	-0 01	+0 28	*1.08	*1.10	2.4	4.0	2.5
2115	Skan Bay	53 37	167 03	-0 07	-0 19	*1.05	*1.10	2.3	4.0	2.4
2117	Kashega Bay	53 28	167 05	-0 08	-0 24	*1.08	*1.19	2.3	4.0	2.5
2119	Chernofski Harbor	53 24	167 32	-0 10	-0 29	*1.02	*1.10	2.2	3.8	2.4
2121	Kulillak Bay	53 28	167 01	-3 10	-3 35	*1.46	*1.27	3.5	5.6	3.2
2123	Eagle Bay	53 29	166 56	-2 56	-3 16	*1.46	*1.02	3.6	5.4	3.1
2125	Raven Bay	53 28	166 52	-3 16	-3 48	*1.49	*1.27	3.6	5.7	3.3
2127	Usof Bay	53 31	166 48	-3 30	-3 45	*1.55	*1.19	3.9	6.1	3.3

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Aleutian Islands-Continued Time meridian, 135°W			on UNALASKA, p.144						
	Unalaska Island-Cont.									
2129	Udamat Bay, Sedanka Island	53 50	166 13	-3 13	-3 25	*1.35	*1.35	3.3	5.1	2.9
2131	Udagak Strait	53 44	166 18	-3 32	-3 59	*1.37	*1.02	3.5	5.5	2.9
2133	Kisselen Bay, Beaver Inlet	53 43	166 34	-2 56	-3 14	*1.40	*1.10	3.5	5.2	3.0
2135	Bogoslof Island	53 55	168 02	-0 30	-0 55	*1.08	*1.10	2.4	3.9	2.5
	Umnak Island									
2137	Otter Point	53 24	167 51	-0 27	-0 40	*0.88	*0.93	1.9	3.4	2.0
2139	Inanudak Bay	53 18	168 21	-0 06	-0 30	*0.96	*0.93	2.2	3.7	2.2
2141	Okee Bay	53 01	168 50	-0 07	-0 43	*0.99	*1.10	2.1	3.7	2.3
2143	Adugak Islands	52 55	169 10	-0 33	-0 56	*1.02	*1.10	2.2	4.0	2.4
2145	Cape Sagak	52 50	169 03	-3 03	-3 16	*1.20	*1.02	2.9	4.9	2.6
2147	Driftwood Bay	52 57	168 43	-2 56	-3 22	*1.35	*1.10	3.3	5.3	2.9
2149	Kigul Island	53 03	168 26	-3 04	-3 42	*1.37	*1.27	3.2	5.5	3.1
	Time meridian, 150°W									
2151	Applegate Cove, Chuginadak Island	52 52	169 52	-1 21	-1 58	*1.08	*1.27	2.2	4.2	2.6
2153	Herbert Island, west side	52 43	170 09	-2 40	-2 51	*1.14	*0.93	2.8	4.4	2.5
	Yunaska Island									
2155	East Cove	52 40	170 34	-2 36	-3 35	*0.88	*0.85	2.0	3.7	2.0
2157	North side	52 41	170 42	-2 05	-2 29	*1.02	*1.19	2.1	4.0	2.4
2159	Amukta Island, north side	52 31	171 14	-2 32	-3 03	*0.94	*1.10	1.9	3.6	2.2
				on SWEEPER COVE, p.148						
2161	Finch Cove, Seguam Island †	52 23	172 24	-1 00	+0 07	*0.87	*0.87	- -	3.2	1.6
	Atka Island									
2163	Martin Harbor, Korovin Bay †	52 14	174 18	+0 19	+0 21	*0.87	*0.87	- -	3.2	1.6
2165	Nazan Bay †	52 12	174 11	+0 21	+0 22	*0.89	*0.89	- -	3.3	1.6
2167	Cape Utalug (4 miles west of) †	52 07	174 12	-1 38	-2 32	*1.19	*1.19	- -	4.4	2.2
2169	Atka Pass, east end †	52 00	175 19	-1 07	-2 10	*1.24	*1.24	- -	4.6	2.3
2171	Sagchudak Island †	52 02	174 29	-1 26	-2 25	*1.24	*1.24	- -	4.6	2.3
2173	Explorer Bay †	52 04	174 34	-2 43	-2 24	*1.24	*1.24	- -	4.6	2.3
2175	Bechevin Bay †	52 02	175 07	+0 11	+0 04	*0.95	*0.95	- -	3.5	1.7
2177	Fenimore Pass †	51 58	175 35	-0 04	-0 13	*0.89	*0.89	- -	3.3	1.6
2179	Bugle Point, Great Sitkin Island †	52 02	175 59	+0 01	-0 05	*0.89	*0.89	- -	3.3	1.6
2181	Sand Bay, Great Sitkin Island †	51 58	176 05	-0 05	-0 20	*0.97	*0.97	- -	3.6	1.8
2183	Tanager Point, Chugul Island †	51 57	175 52	- - -	-2 08	*1.00	*1.00	- -	3.7	1.9
2185	Chisak Bay, Little Tanaga Island †	51 48	176 08	- - -	-2 06	*0.89	*0.89	- -	3.3	1.7
2187	Cemetery Point, Kagalaska Island †	51 49	176 16	-0 45	-0 29	*0.92	*0.92	- -	3.4	1.7
2189	Laska Cove, Kagalaska Island †	51 50	176 24	-0 04	+0 07	*0.97	*0.97	- -	3.6	1.8
	Adak Island									
2191	Clam Lagoon, Kuluk Bay †	51 56	176 36	+1 14	+2 12	*0.78	*0.78	- -	2.9	1.4
2193	SWEEPER COVE, Kuluk Bay †	51 51	176 39		Daily predictions			- -	3.7	1.8
2195	Finger Bay, Kuluk Bay †	51 50	176 37	0 00	0 00	*1.00	*1.00	- -	3.7	1.8
2197	Adak Right †	51 46	176 26	-1 24	-2 02	*1.00	*1.00	- -	3.7	1.8
2199	Boot Bay †	51 43	176 32	-1 38	-2 09	*0.97	*0.97	- -	3.6	1.8
2201	Bay of Waterfalls †	51 39	176 50	-1 20	-2 04	*0.95	*0.95	- -	3.5	1.7
2203	Three Arm Bay †	51 45	176 51	-1 28	-1 37	*1.00	*1.00	- -	3.7	1.8
2205	Unalga Bight †	51 47	176 48	-0 07	-0 21	*0.97	*0.97	- -	3.6	1.8
2207	Andrew Bay †	51 59	176 38	+0 13	-0 12	*0.97	*0.97	- -	3.6	1.8
	Kanaga Island									
2209	Shoal Point	51 52	177 04	+0 01	-0 16	*0.86	*0.86	- -	3.2	1.6
2211	Cape Chlanak	51 43	177 09	-1 22	-1 34	*0.92	*0.92	- -	3.4	1.7
2213	Kanaga Bay †	51 43	177 12	-1 39	-1 44	*1.05	*1.05	- -	3.9	1.9
2215	Cape Chunu †	51 40	177 38	-1 44	-1 54	*1.11	*1.11	- -	4.1	2.0
	Tanaga Island									
2217	Gusty Bay †	51 52	177 54	+0 25	0 00	*0.89	*0.89	- -	3.3	1.6
2219	Hot Springs Bay †	51 47	177 48	-0 40	-0 12	*0.84	*0.84	- -	3.1	1.5
2221	Tanaga Bay †	51 43	178 00	-0 06	-0 32	*1.08	*1.08	- -	4.0	2.0
2223	Lash Bay †	51 40	178 03	-0 56	-1 39	*1.14	*1.14	- -	4.2	2.1
	Delarof Islands									
2225	Ogliuga Island (east coast) †	51 36	178 37	+0 01	-0 43	*0.95	*0.95	- -	3.5	1.7
2227	Gareloi Island †	51 45	178 48	-0 08	-0 30	*1.00	*1.00	- -	3.7	1.8
2229	Ulak Island †	51 22	178 59	-0 56	-1 19	*1.03	*1.03	- -	3.8	1.9
	Rat Islands									
2231	South Bight, Amchitka Island †	51 23	180 37	+0 06	-0 40	*0.95	*0.95	- -	3.5	1.7
2233	Constantine Harbor, Amchitka I †	51 25	180 43	+0 19	-0 06	*0.76	*0.76	- -	2.8	1.4
2235	Gertrude Cove, Kiska Island †	51 56	182 33	+0 02	-0 19	*0.86	*0.86	- -	3.2	1.6
2237	Kiska Harbor, Kiska Island †	51 59	182 27	+0 24	-0 13	*0.97	*0.97	- -	3.6	1.8
				on MASSACRE BAY, p.152						
2239	Alcan Harbor, Shemya Island †	52 44	185 56	0 00	-0 03	*1.03	*1.03	- -	3.4	1.7
2241	Otkriti Bay, Agattu Island †	52 23	186 22	-0 14	-0 13	*1.03	*1.03	- -	3.4	1.7
	Attu Island									
2243	MASSACRE BAY †	52 50	186 48		Daily predictions			- -	3.3	1.6
2245	Chichagof Harbor †	52 56	186 46	+0 13	+0 16	*1.09	*1.09	- -	3.6	1.8
2247	Holtz Bay †	52 56	186 50	-0 04	+0 18	*1.12	*1.12	- -	3.7	1.8
2249	Steller Cove †	52 59	187 06	-0 13	+0 11	*1.12	*1.12	- -	3.7	1.8
2251	Etienne Bay †	52 56	187 23	-0 17	+0 03	*1.12	*1.12	- -	3.7	1.8

Endnotes can be found at the end of table 2.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Bristol Bay									
	Time meridian, 135°W					on UNALASKA, p.144				
2253	Amak Island	55 25	163 07	+1 47	+1 48	*2.13	*1.78	5.2	7.7	4.7
2255	Grant Point, Izembek Lagoon	55 16	162 54	+3 03	+4 05	*1.23	*0.85	3.2	4.5	2.6
						on NUSHAGAK BAY, p.156				
2257	Port Moller (Entrance Point)	55 59	160 34	-4 33	-4 59	*0.56	*0.36	7.6	10.8	6.2
2259	Port Heiden	56 56	158 44	-3 03	-2 55	*0.62	*1.04	8.5	12.3	6.9
	Egegik River									
2261	Entrance	58 14	157 30	-1 30	-1 13	*0.92	*0.92	13.8	18.2	9.4
2263	Egegik	58 13	157 22	-1 04	+0 36	*0.65	*0.32	10.8	13.3	6.2
2265	Middle Bluff, Kvichak Bay	58 27	157 30	-0 50	-0 50	*1.01	*1.01	15.2	19.6	10.1
	Naknek River									
2267	Entrance <13>	58 43	157 03	-0 19	+0 26	*1.16	*0.88	18.5	22.6	11.4
2269	Morakas Point	58 44	156 56	-0 11	+1 37	*0.90	*0.36	15.1	17.8	8.4
2271	Omakstalia Point	58 42	156 45	+0 12	+3 35	*0.37	*0.12	6.3	8.1	3.4
2273	Naknek Air Base	58 40	156 39	+0 57	+4 46	*0.13	*0.08	2.1	3.2	1.2
	Kvichak River									
2275	Nakeen	58 56	157 02	+0 04	+2 01	*0.90	*0.28	15.4	17.9	8.4
2277	Kvichak	58 58	156 57	+0 35	+2 49	*0.83	*0.36	13.9	16.5	7.8
2279	Levelock	59 07	156 50	+1 27	+4 34	*0.49	*0.20	8.2	10.3	4.6
	Nushagak Bay									
2281	Protection Point	58 30	158 42	-0 12	-0 22	*0.85	*1.00	12.7	16.9	8.8
2283	NUSHAGAK BAY (Clarks Point)	58 51	158 33			Daily predictions		15.3	19.5	10.1
2285	Snag Point	59 02	158 27	+0 49	+1 07	*1.01	*0.84	15.9	19.8	10.0
2287	Black Rock, Walrus Islands <14>	58 42	160 11	+0 07	-0 07	*0.43	*0.72	5.9	9.5	4.7
	Kuskokwim Bay and River									
2289	Goodnews Bay entrance	59 03	161 49	-6 04	-6 33	*0.38	*0.24	6.2	8.9	3.7
2291	Carter Spit	59 19	161 57	-5 44	-6 00	*0.49	*0.28	8.0	10.7	4.7
2293	Eek Channel, off Quinhagak	59 45	162 15	-4 24	-4 19	*0.57	*0.20	9.7	12.3	5.3
2295	Warehouse Creek entrance	59 56	162 05	-3 58	-3 34	*0.59	*0.20	10.0	12.6	5.5
2297	Kuskokwak Creek entrance	60 02	162 20	-3 10	-2 44	*0.57	*0.20	9.6	12.2	5.3
2299	Popokamute	60 04	162 25	-2 51	-2 19	*0.49	*0.20	8.3	10.9	4.6
2301	Apokak Creek entrance	60 08	162 10	-2 50	-2 14	*0.56	*0.20	9.4	12.0	5.2
2303	Bethel	60 48	161 45	+1 48	+3 47	*0.15	*0.16	2.3	4.0	1.5
	Bering Sea					on UNALASKA, p.144				
2304	Zapadni Bay, St. George Island	56 34	169 41	+1 15	+1 18	*0 89	*0 89	- -	3.3	1.7
2305	Village Cove, St. Paul Island	57 07	170 16	+0 18	+0 13	*0.86	*0.86	2.0	3.2	2.0
2307	St. Matthew Island	60 22	172 43	+0 22	+0 50	*0.57	*0.57	1.3	2.1	1.2
	St. Lawrence Island					on NUSHAGAK BAY, p.156				
2309	Northeast Cape	63 17	168 44	-1 57	-2 22	*0.12	*0.08	1.9	2.4	1.1
2311	Fossil River entrance	63 28	170 02	-2 06	-2 34	*0 08	*0 08	1.3	1.7	0.8
2313	Niyrakpak Lagoon entrance	63 37	171 23	-2 33	-2 57	*0.06	*0.06	0.9	1.2	0.6
2315	Moghoweyik River entrance	63 28	171 50	-5 26	-4 15	*0.08	*0.08	1.3	1.7	0.8
2317	Powooiliak Point	63 21	171 16	-7 47	-8 10	*0.12	*0.12	1.8	2.4	1.2
2319	Maknik Lagoon entrance	63 07	169 25	+0 04	0 00	*0.10	*0.08	1.5	1.9	0.9
2321	Tachikuga Bay, Nunivak Island	60 04	167 14	-6 17	-6 23	*0.22	*0.32	3.1	4.3	2.3
2323	Kokechik Bay	61 42	166 00	-1 16	-1 22	*0.33	*0.40	4.8	6.5	3.4
2325	Cape Romanzof	61 49	166 05	-0 53	-1 47	*0.33	*0.28	5.2	6.8	3.3
2327	Black, Black River	62 20	165 19	+0 18	+0 03	*0.25	*0.24	3.8	5.0	2.5
2329	Kwikluak Pass, Yukon River	62 37	164 51	+2 30	+3 44	*0.08	*0.04	1.4	2.3	0.8
2331	Kawanak Pass entrance, Yukon River	63 02	164 28	+3 09	+3 33	*0.10	*0.08	1.5	2.7	0.9
	Norton Sound					on ST. MICHAEL, p.160				
2333	Apoon Mouth, Yukon River †	63 03	163 23	-1 19	-1 19	*1.00	*1.00	- -	4.0	2.0
2335	Pikmiktalik River entrance †	63 16	162 36	-1 02	-1 02	*1 08	*1.08	- -	4.2	2.1
2337	ST. MICHAEL †	63 29	162 02			Daily predictions		- -	3.9	2.0
2339	North Bay, Stuart Island †	63 37	162 30	-0 22	-0 22	*0.72	*0.72	- -	2.8	1.4
2341	Carolyn Island, Golovnin Bay †	64 27	162 52	+1 19	+1 19	*0.46	*0.46	- -	1.8	0.9
2343	Nome	64 30	165 24	+7 26	+6 15	*0.41	*0.41	1.0	1.6	0.9
	Bering Straits					on KODIAK, p.140				
2345	Port Clarence	65 13	166 28	- - -	- - -	- -	- -	1.2	1.4	0.7
	Arctic Ocean <15>									
2347	Kiwalik, Kotzebue Sound	66 08	161 52	+6 20	+6 10	*0.32	*0.32	2.1	2.7	1.3
2349	Point Barrow	71 22	156 22	-0 33	-0 23	*0.05	*0.05	0.3	0.4	0.2
2351	Flaxman Island	70 11	145 50	-0 53	-0 25	*0.08	*0.08	0.5	0.7	0.3
2353	Herschel Island, Mackenzie Bay	69 34	138 55	-1 32	-1 39	- -	- -	0.6	0.7	1.5
2355	Tuktoyaktuk, Mackenzie Bay	69 27	133 00	-1 26	-0 51	- -	- -	1.1	1.2	1.3

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	HAWAIIAN ISLANDS			on HONOLULU, p.164						
	Time meridian, 165°W									
2357	Midway Islands	28 13	177 22	+0 12	+0 09	*0.67	*0.67	0.8	1.2	0.6
2359	Lisianski Island	26 04	173 58	- - -	- - -	- -	- -	0.5	0.8	0.3
	Time meridian, 150°W									
2361	Laysan Island	25 46	171 45	+1 02	+1 12	*0.53	*0.50	0.7	1.0	0.4
2363	East Island, French Frigate Shoals	23 47	166 13	+0 03	+0 08	*0.73	*0.73	0.9	1.4	0.6
2365	Nonopapa, Niihau Island	21 52	160 14	-0 16	-0 11	*0.77	*0.77	1.0	1.6	0.7
	Kauai Island									
2367	Waimea Bay	21 57	159 40	-0 20	-0 07	*0.77	*0.77	1.0	1.6	0.7
2369	Port Allen, Hanapepe Bay	21 54	159 35	-0 36	-0 22	*0.85	*0.85	1.1	1.7	0.7
2371	Nawiliwili Bay	21 58	159 21	-0 27	-0 25	-0.1	0.0	1.2	1.9	0.8
2373	Hanamaulu Bay	22 00	159 20	-0 17	-0 21	-0.1	0.0	1.2	1.8	0.8
2375	Hanalei Bay	22 13	159 30	-1 28	-1 47	0.0	0.0	1.3	1.8	0.8
	Oahu Island									
2377	Haleiwa, Waialua Bay †	21 36	158 07	-1 02	-2 05	*0.80	*0.80	- -	1.6	0.7
2379	Waianae	21 27	158 12	+0 20	+0 18	-0.1	0.0	1.2	1.8	0.8
2381	HONOLULU	21 18	157 52			Daily predictions		1.3	2.0	0.8
2383	Hanauma Bay	21 17	157 42	-0 59	-0 45	0.0	0.0	1.3	1.9	0.8
2385	Waimanalo	21 20	157 42	-1 15	-1 09	*0.85	*0.85	1.1	1.8	0.8
2387	Moku o Loe	21 26	157 48	-1 24	-1 14	+0.1	+0.2	1.2	2.0	1.0
2389	Waikane, Kaneohe Bay	21 30	157 51	-1 46	-1 18	+0.3	+0.2	1.4	2.2	1.1
2391	Laie Bay	21 39	157 56	-1 45	-1 46	+0.1	+0.1	1.3	2.2	0.9
	Molokai Island									
2393	Kolo	21 06	157 12	+0 05	+0 01	0.0	0.0	1.3	2.0	0.8
2395	Kaunakakai	21 05	157 02	-0 05	-0 08	+0.1	0.0	1.4	2.1	0.9
2397	Kamalo Harbor	21 03	156 53	-0 37	-0 16	+0.1	0.0	1.4	2.1	0.9
2399	Pukoo Harbor	21 04	156 48	-1 03	-0 48	+0.1	0.0	1.4	2.1	0.9
2401	Kaumalapau, Lanai Island	20 47	157 00	+0 02	+0 03	+0.2	0.0	1.5	2.2	0.9
	Maui Island									
2403	Kahului	20 54	156 28	-1 53	-1 41	+0.4	+0.2	1.5	2.3	1.1
2405	Hana	20 46	155 59	-1 13	-1 23	+0.5	0.0	1.8	2.5	1.1
2407	Makena	20 39	156 27	-0 32	-0 32	-0.1	0.0	1.2	1.8	0.8
2409	Kihei, Maalaea Bay	20 47	156 28	-0 01	-0 22	+0.3	0.0	1.6	2.3	1.0
2411	Lahaina	20 53	156 41	-0 35	-0 40	+0.2	+0.1	1.4	2.2	1.0
	Kahoolawe Island									
2413	Kuheia Bay	20 36	156 36	-0 09	-0 09	+0.2	0.0	1.5	2.1	0.9
2415	Smuggler Cove	20 31	156 41	-0 15	+0 03	+0.2	0.0	1.5	2.2	0.9
	Hawaii Island									
2417	Mahukona	20 11	155 54	-0 26	-0 17	+0.1	0.0	1.4	2.1	0.9
2419	Kawaihae	20 02	155 50	-0 04	-0 03	0.0	0.0	1.3	2.0	0.8
2421	Kailua Kona	19 39	156 00	-0 26	-0 22	+0.1	0.0	1.4	2.1	0.9
2423	Napoopoo, Kealakekua Bay	19 28	155 55	-0 16	-0 12	+0.1	0.0	1.4	2.1	0.9
2425	Honuapo	19 05	155 33	-0 26	-0 16	+0.5	+0.1	1.7	2.5	1.1
2427	Hilo	19 44	155 04	-1 04	-0 59	+0.5	+0.1	1.7	2.4	1.1
2429	Johnston Island	16 45	169 31	+1 26	+1 16	+0.5	0.0	1.9	2.2	1.1

Endnotes can be found at the end of table 2.

ENDNOTES

* Ratio. If the ratio is accompanied by a correction factor multiply the heights of the high and low waters at the reference station by the ratio and then apply the correction factor. See note and examples on pages 165 and 166.

† The tide at this place is chiefly diurnal. See caution note on page 165.

< 1> For places on the Atlantic coast, see "Tide Tables, East Coast of North and South America."

< 2> For places on the Caribbean Sea and Gulf of Mexico, see "Tide Tables, East Coast of North and South America."

< 3> The bore in the Colorado River above Phillips Point is reported to have a height of several feet at times of large tides.

< 4> These data apply only during low river stages.

< 5> The Columbia River is subject to annual freshets. Short range predictions are available at local river forecast centers. The data for stations above Harrington Point apply only during low river stages.

< 6> For stations on the Canadian side see pages 175 and 176.

< 7> The low water seldom falls below the chart datum.

< 8> The data for La Conner apply only during low levels of the channel which usually occur in midsummer. Low water seldom falls below the chart datum.

< 9> Heights are referred to mean lower low water, the datum of soundings on National Ocean Service charts.

<10> Because of shoals, low water at this place is restricted from falling below half tide level outside the river entrance.

<11> A bore frequently occurs in Turnagain Arm just after low water. Under favorable conditions it is said to reach a height of 6 feet.

<12> Because of the shoal condition of the upper part of Knik Arm, the channel off Eklutna becomes practically a nontidal stream during the period when the height of the tide at Anchorage is less than 15 feet above mean lower low water.

<13> No low water falls below -2 feet.

<14> When the difference in height between lower high water and higher low water at Nushagak Bay is less than 8 feet, reliance should not be placed on calculated corresponding tides at Black Rock because the tide there may actually be diurnal.

<15> Along the Arctic coast of Alaska east of Cape Lisburne the mean range is about 0.5 foot.

<16> For the passages inside Vancouver Island the height differences apply only to the higher high and lower low waters at the indicated reference station.

<17> The slough in this area goes dry at low water stages of the tide. The mean high water depth is about 5 feet.

<18> Due to bottom configuration and depths at low water stages, a low water stand may occur at this station.

TABLE 3.—HEIGHT OF TIDE AT ANY TIME

EXPLANATION OF TABLE

Although the footnote of table 3 may be sufficient explanation, two examples are given here to illustrate its use.

Example 1.—Find the height of the tide at 0735 at Balboa, Panama, on a day when the predicted tides,from table 1 are given as:

Low Water		*High Water*	
Time h.m.	*Height ft*	*Time h.m.*	*Height ft*
0500	3.1	1114	14.7
1746	2.5	2356	13.4

An inspection of the above example shows that the desired time falls between the two morning tides.

The duration of rise is $11^h\ 14^m - 5^h\ 00^m = 6^h\ 14^m$.

The time after low water for which the height is required is $7^h\ 35^m - 5h\ 00^m = 2^h\ 35^m$.

The range of tide is $14.7 - 3.1 = 11.6$ feet.

The duration of rise or fall in table 3 is given in heavy-faced type for each 20 minutes from $4^h\ 00^m$ to $10^h\ 40^m$. The nearest tabular value of $6^h\ 14^m$, the above duration of rise, is $6^h\ 20^m$; and on the horizontal line of $6^h\ 20^m$ the nearest tabular time to $2^h\ 35^m$ after low water for which the height is required is $2^h\ 32^m$. Following down the column in which this $2^h\ 32^m$ is found to its intersection with the line of the range 11.5 feet (the nearest tabular value to the above range of 11.6 feet), the correction is found to be 4.0 feet, which, being reckoned from low water, must be added, making $3.1 + 4.0 = 7.1$ feet or 2.2 meters which is the required height above mean low water springs, the datum for Balboa.

Example 2.—Find the height of the tide at 0300 at Los Angeles, Calif., on a day when the predicted tides from table 1 are given as:

High Water		*Low Water*	
Time h.m.	*Height ft*	*Time h.m.*	*Height ft*
0039	4.9	0814	0.2
1510	3.1	1933	2.4

The duration of fall is $08^h\ 14^m - 00^h\ 39^m = 7^h\ 35^m$.

The time after high water for which the height is required is $03^h\ 00^m - 00^h\ 39^m = 02^h\ 21^m$.

The range of tide is $4.9 - 0.2 = 4.7$ feet.

Entering table 3 at the duration of fall of $7^h\ 40^m$, which is the nearest value to $7^h\ 35^m$, the nearest value on the horizontal line to $2^h\ 21^m$ is $2^h\ 18^m$ after high water. Following down this column to its intersection with a range of 4.5 feet which is the nearest tabular value to 4.7 feet, one obtains 0.9 which, being calculated from high water, must be subtracted from it. The approximate height at $03^h\ 00^m$ is, therefore, $4.9 - 0.9 = 4.0$ feet or 1.2 meters.

When the duration of rise or fall is greater than $10^h\ 40^m$, enter the table with one-half the given duration and with one-half the time from the nearest high or low water; but if the duration of rise or fall is

less than 4 hours, enter the table with double the given duration and with double the time from the nearest high or low water.

Similarly, when the range of tide is greater than 20 feet, enter the table with one-half the given range. The tabular correction should then be doubled before applying it to the given high or low water height. If the range of tide is greater than 40 feet, take one-third of the range and multiply the tabular correction by 3.

If the height at any time is desired for a place listed in table 2, predictions of the high and low waters for the day in question should be obtained by the use of the differences given for the place in that table. Having obtained these predictions, the height for any intermediate time is obtained in the same manner as illustrated in the foregoing examples.

GRAPHICAL METHOD

If the height of the tide is required for a number of times on a certain day the full tide curve for the day may be obtained by the *one-quarter, one-tenth rule*. The procedure is as follows:

1. On cross-section paper plot the high and low water points in the order of their occurrence for the day, measuring time horizontally and height vertically. These are the basic points for the curve.
2. Draw light straight lines connecting the points representing successive high and low waters.
3. Divide each of these straight lines into four equal parts. The halfway point of each line gives another point for the curve.
4. At the quarter point adjacent to high water draw a vertical line above the point and at the quarter point adjacent to low water draw a vertical line below the point, making the length of these lines equal to one-tenth of the range between the high and low waters used. The points marking the ends of these vertical lines give two additional intermediate points for the curve.
5. Draw a smooth curve through the points of high and low waters and the intermediate points, making the curve well rounded near high and low waters. This curve will approximate the actual tide curve and heights for any time of the day may be readily scaled from it.

Caution. Both methods presented are based on the assumption that the rise and fall conform to simple cosine curves. Therefore the heights obtained will be approximate. The roughness of approximation will vary as the tide curve differs from a cosine curve.

An example of the use of the graphical method is illustrated below. Using the same predicted tides as in example 2, the approximate height at $03^h\ 00^m$ could be determined as shown below.

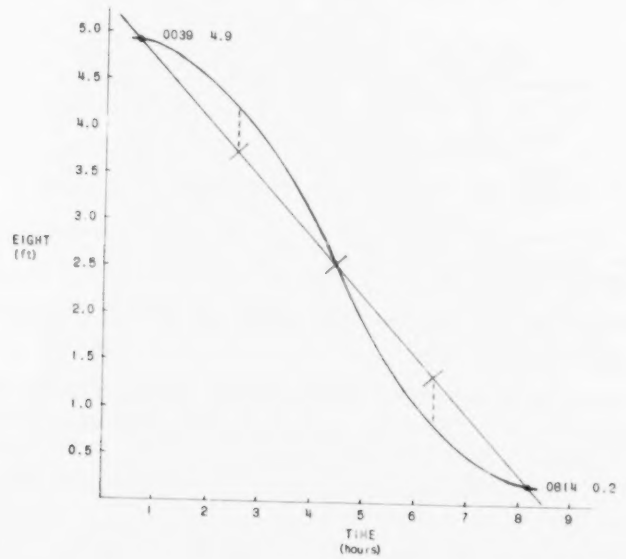


TABLE 3.—HEIGHT OF TIDE AT ANY TIME

Duration of rise or fall, see footnote	Time from the nearest high water or low water														
h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.
4 00	0 08	0 16	0 24	0 32	0 40	0 48	0 56	1 04	1 12	1 20	1 28	1 36	1 44	1 52	2 00
4 20	0 09	0 17	0 26	0 35	0 43	0 52	1 01	1 09	1 18	1 27	1 35	1 44	1 53	2 01	2 10
4 40	0 09	0 19	0 28	0 37	0 47	0 56	1 05	1 15	1 24	1 33	1 43	1 52	2 01	2 11	2 20
5 00	0 10	0 20	0 30	0 40	0 50	1 00	1 10	1 20	1 30	1 40	1 50	2 00	2 10	2 20	2 30
5 20	0 11	0 21	0 32	0 43	0 53	1 04	1 15	1 25	1 36	1 47	1 57	2 08	2 19	2 29	2 40
5 40	0 11	0 23	0 34	0 45	0 57	1 08	1 19	1 31	1 42	1 53	2 05	2 16	2 27	2 39	2 50
6 00	0 12	0 24	0 36	0 48	1 00	1 12	1 24	1 36	1 48	2 00	2 12	2 24	2 36	2 48	3 00
6 20	0 13	0 25	0 38	0 51	1 03	1 16	1 29	1 41	1 54	2 07	2 19	2 32	2 45	2 57	3 10
6 40	0 13	0 27	0 40	0 53	1 07	1 20	1 33	1 47	2 00	2 13	2 27	2 40	2 53	3 07	3 20
7 00	0 14	0 28	0 42	0 56	1 10	1 24	1 38	1 52	2 06	2 20	2 34	2 48	3 02	3 16	3 30
7 20	0 15	0 29	0 44	0 59	1 13	1 28	1 43	1 57	2 12	2 27	2 41	2 56	3 11	3 25	3 40
7 40	0 15	0 31	0 46	1 01	1 17	1 32	1 47	2 03	2 18	2 33	2 49	3 04	3 19	3 35	3 50
8 00	0 16	0 32	0 48	1 04	1 20	1 36	1 52	2 08	2 24	2 40	2 56	3 12	3 28	3 44	4 00
8 20	0 17	0 33	0 50	1 07	1 23	1 40	1 57	2 13	2 30	2 47	3 03	3 20	3 37	3 53	4 10
8 40	0 17	0 35	0 52	1 09	1 27	1 44	2 01	2 19	2 36	2 53	3 11	3 28	3 45	4 03	4 20
9 00	0 18	0 36	0 54	1 12	1 30	1 48	2 06	2 24	2 42	3 00	3 18	3 36	3 54	4 12	4 30
9 20	0 19	0 37	0 56	1 15	1 33	1 52	2 11	2 29	2 48	3 07	3 25	3 44	4 03	4 21	4 40
9 40	0 19	0 39	0 58	1 17	1 37	1 56	2 15	2 35	2 54	3 13	3 33	3 52	4 11	4 31	4 50
10 00	0 20	0 40	1 00	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00
10 20	0 21	0 41	1 02	1 23	1 43	2 04	2 25	2 45	3 06	3 27	3 47	4 08	4 29	4 49	5 10
10 40	0 21	0 43	1 04	1 25	1 47	2 08	2 29	2 51	3 12	3 33	3 55	4 16	4 37	4 59	5 20

Range of tide, see footnote	Correction to height														
Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.
0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
1.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5
1.5	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8
2.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
2.5	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2
3.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.3	1.5
3.5	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8
4.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0
4.5	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2
5.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.7	2.0	2.2	2.5
5.5	0.0	0.1	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.2	2.5	2.8
6.0	0.0	0.1	0.1	0.3	0.4	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0
6.5	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.3	1.6	1.9	2.2	2.6	2.9	3.2
7.0	0.0	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.4	1.8	2.1	2.4	2.8	3.1	3.5
7.5	0.0	0.1	0.2	0.3	0.5	0.7	1.0	1.2	1.5	1.9	2.2	2.6	3.0	3.4	3.8
8.0	0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.3	1.6	2.0	2.4	2.8	3.2	3.6	4.0
8.5	0.0	0.1	0.2	0.4	0.6	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.4	3.8	4.2
9.0	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.7	3.1	3.6	4.0	4.5
9.5	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.8	3.3	3.8	4.3	4.8
10.0	0.0	0.1	0.2	0.4	0.7	1.0	1.3	1.7	2.1	2.5	3.0	3.5	4.0	4.5	5.0
10.5	0.0	0.1	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.6	3.1	3.6	4.2	4.7	5.2
11.0	0.0	0.1	0.3	0.5	0.7	1.1	1.4	1.8	2.3	2.8	3.3	3.8	4.4	4.9	5.5
11.5	0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.9	2.4	2.9	3.4	4.0	4.6	5.1	5.8
12.0	0.0	0.1	0.3	0.5	0.8	1.1	1.5	2.0	2.5	3.0	3.6	4.1	4.8	5.4	6.0
12.5	0.0	0.1	0.3	0.5	0.8	1.2	1.6	2.1	2.6	3.1	3.7	4.3	5.0	5.6	6.2
13.0	0.0	0.1	0.3	0.6	0.9	1.2	1.7	2.2	2.7	3.2	3.9	4.5	5.1	5.8	6.5
13.5	0.0	0.1	0.3	0.6	0.9	1.3	1.7	2.2	2.8	3.4	4.0	4.7	5.3	6.0	6.8
14.0	0.0	0.2	0.3	0.6	0.9	1.3	1.8	2.3	2.9	3.5	4.2	4.8	5.5	6.3	7.0
14.5	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.4	3.0	3.6	4.3	5.0	5.7	6.5	7.2
15.0	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.5	3.1	3.8	4.4	5.2	5.9	6.7	7.5
15.5	0.0	0.2	0.4	0.7	1.0	1.5	2.0	2.6	3.2	3.9	4.6	5.4	6.1	6.9	7.8
16.0	0.0	0.2	0.4	0.7	1.1	1.5	2.1	2.6	3.3	4.0	4.7	5.5	6.3	7.2	8.0
16.5	0.0	0.2	0.4	0.7	1.1	1.6	2.1	2.7	3.4	4.1	4.9	5.7	6.5	7.4	8.2
17.0	0.0	0.2	0.4	0.7	1.1	1.6	2.2	2.8	3.5	4.2	5.0	5.9	6.7	7.6	8.5
17.5	0.0	0.2	0.4	0.8	1.2	1.7	2.2	2.9	3.6	4.4	5.2	6.0	6.9	7.8	8.8
18.0	0.0	0.2	0.4	0.8	1.2	1.7	2.3	3.0	3.7	4.5	5.3	6.2	7.1	8.1	9.0
18.5	0.1	0.2	0.5	0.8	1.2	1.8	2.4	3.1	3.8	4.6	5.5	6.4	7.3	8.3	9.2
19.0	0.1	0.2	0.5	0.8	1.3	1.8	2.4	3.1	3.9	4.8	5.6	6.6	7.5	8.5	9.5
19.5	0.1	0.2	0.5	0.8	1.3	1.9	2.5	3.2	4.0	4.9	5.8	6.7	7.7	8.7	9.8
20.0	0.1	0.2	0.5	0.9	1.3	1.9	2.6	3.3	4.1	5.0	5.9	6.9	7.9	9.0	10.0

Obtain from the predictions the high water and low water, one of which is before and the other after the time for which the height is required. The difference between the times of occurrence of these tides is the duration of rise or fall, and the difference between their heights is the range of tide for the above table. Find the difference between the nearest high or low water and the time for which the height is required.

Enter the table with the duration of rise or fall, printed in heavy-faced type, which most nearly agrees with the actual value, and on that horizontal line find the time from the nearest high or low water which agrees most nearly with the corresponding actual difference. The correction sought is in the column directly below, on the line with the range of tide.

When the nearest tide is high water, subtract the correction.

When the nearest tide is low water, add the correction.

TABLE 4.—LOCAL MEAN TIME OF SUNRISE AND SUNSET

EXPLANATION OF TABLE

This table gives the local mean time of the rising and setting of the Sun's upper limb for every fifth day of the year. The times were computed for the instant when the true zenith distance of the Sun's center is 90°50', 34' having been allowed for horizontal refraction and 16' for semidiameter. No allowance has been made for elevation of the observer.

Because of the sensible variations which may be made in the time of rising or setting of the Sun by a difference in elevation of the observer, and by changes in the refraction, any great refinement in the interpolation of intermediate dates or latitudes in this table is unnecessary.

The values obtained from table 4 may be converted to standard time by means of table 5, which follows it.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date	0°		5° N.		10° N.		15° N.		20° N.		25° N.	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan. 1	06 00	18 07	06 08	17 59	06 17	17 50	06 26	17 41	06 35	17 32	06 45	17 22
6	06 02	18 10	06 10	18 01	06 19	17 53	06 27	17 44	06 37	17 35	06 46	17 25
11	06 04	18 12	06 12	18 04	06 20	17 56	06 29	17 47	06 37	17 38	06 47	17 29
16	06 06	18 13	06 14	18 06	06 22	17 58	06 30	17 50	06 38	17 42	06 47	17 33
21	06 08	18 15	06 15	18 08	06 22	18 00	06 30	17 53	06 38	17 45	06 46	17 37
26	06 09	18 16	06 16	18 09	06 23	18 03	06 30	17 56	06 37	17 48	06 45	17 40
31	06 10	18 17	06 16	18 11	06 23	18 04	06 29	17 58	06 36	17 51	06 43	17 44
Feb. 5	06 11	18 18	06 16	18 12	06 22	18 06	06 28	18 00	06 34	17 54	06 41	17 47
10	06 11	18 18	06 16	18 13	06 21	18 07	06 26	18 02	06 32	17 57	06 38	17 51
15	06 11	18 18	06 15	18 13	06 20	18 09	06 25	18 04	06 29	17 59	06 35	17 54
20	06 10	18 17	06 14	18 13	06 18	18 09	06 22	18 06	06 26	18 01	06 31	17 57
25	06 10	18 16	06 13	18 13	06 16	18 10	06 20	18 07	06 23	18 03	06 27	18 00
Mar. 2	06 09	18 16	06 11	18 13	06 14	18 11	06 17	18 08	06 19	18 05	06 22	18 03
7	06 08	18 14	06 10	18 13	06 12	18 11	06 13	18 09	06 15	18 07	06 17	18 05
12	06 07	18 13	06 08	18 12	06 09	18 11	06 10	18 10	06 11	18 09	06 13	18 07
17	06 05	18 12	06 06	18 11	06 06	18 11	06 07	18 10	06 07	18 10	06 07	18 10
22	06 04	18 10	06 03	18 10	06 03	18 11	06 03	18 11	06 03	18 11	06 02	18 12
27	06 02	18 09	06 01	18 10	06 00	18 11	05 59	18 12	05 58	18 13	05 57	18 14
Apr. 1	06 01	18 07	05 59	18 09	05 57	18 11	05 56	18 12	05 54	18 14	05 52	18 16
6	05 59	18 06	05 57	18 08	05 55	18 10	05 52	18 13	05 50	18 16	05 47	18 18
11	05 58	18 04	05 55	18 07	05 52	18 10	05 49	18 14	05 46	18 17	05 42	18 21
16	05 57	18 03	05 53	18 07	05 49	18 10	05 46	18 14	05 42	18 18	05 37	18 23
21	05 55	18 02	05 51	18 06	05 47	18 11	05 42	18 15	05 38	18 20	05 33	18 25
26	05 54	18 01	05 50	18 06	05 45	18 11	05 40	18 16	05 34	18 22	05 28	18 27
May 1	05 54	18 01	05 48	18 06	05 43	18 12	05 37	18 17	05 31	18 23	05 25	18 30
6	05 53	18 00	05 47	18 06	05 41	18 12	05 35	18 19	05 28	18 25	05 21	18 32
11	05 53	18 00	05 46	18 06	05 40	18 13	05 33	18 20	05 26	18 27	05 18	18 35
16	05 53	18 00	05 46	18 07	05 39	18 14	05 31	18 21	05 24	18 29	05 15	18 38
21	05 53	18 00	05 46	18 07	05 38	18 15	05 30	18 23	05 22	18 31	05 13	18 40
26	05 53	18 01	05 46	18 08	05 38	18 16	05 30	18 25	05 21	18 33	05 12	18 43
31	05 54	18 01	05 46	18 09	05 38	18 18	05 29	18 26	05 20	18 35	05 10	18 45
June 5	05 55	18 02	05 46	18 10	05 38	18 19	05 29	18 28	05 20	18 37	05 10	18 47
10	05 56	18 03	05 47	18 12	05 38	18 20	05 29	18 29	05 20	18 39	05 10	18 49
15	05 57	18 04	05 48	18 13	05 39	18 22	05 30	18 31	05 20	18 40	05 10	18 51
20	05 58	18 05	05 49	18 14	05 40	18 23	05 31	18 32	05 21	18 42	05 11	18 52
25	05 59	18 06	05 50	18 15	05 41	18 24	05 32	18 33	05 22	18 43	05 12	18 53
30	06 00	18 07	05 51	18 16	05 43	18 25	05 33	18 34	05 24	18 43	05 13	18 54
July 5	06 01	18 08	05 52	18 17	05 44	18 25	05 35	18 34	05 25	18 44	05 15	18 54
10	06 02	18 09	05 53	18 17	05 45	18 25	05 36	18 34	05 27	18 43	05 17	18 53
15	06 02	18 09	05 54	18 17	05 46	18 25	05 38	18 34	05 29	18 43	05 19	18 52
20	06 03	18 10	05 55	18 17	05 47	18 25	05 39	18 33	05 31	18 42	05 22	18 51
25	06 03	18 10	05 56	18 17	05 48	18 24	05 41	18 32	05 33	18 40	05 24	18 49
30	06 03	18 10	05 56	18 17	05 49	18 23	05 42	18 31	05 35	18 38	05 26	18 46
Aug. 4	06 03	18 10	05 56	18 16	05 50	18 22	05 43	18 29	05 36	18 36	05 29	18 43
9	06 02	18 09	05 56	18 15	05 51	18 20	05 44	18 26	05 38	18 33	05 31	18 40
14	06 01	18 08	05 56	18 13	05 51	18 18	05 45	18 24	05 40	18 30	05 33	18 36
19	06 00	18 07	05 56	18 12	05 51	18 16	05 46	18 21	05 41	18 26	05 36	18 31
24	05 59	18 06	05 55	18 10	05 51	18 14	05 47	18 18	05 42	18 22	05 38	18 27
29	05 58	18 04	05 54	18 08	05 51	18 11	05 47	18 14	05 44	18 18	05 40	18 22
Sept. 3	05 56	18 03	05 53	18 05	05 51	18 08	05 48	18 11	05 45	18 14	05 41	18 17
8	05 54	18 01	05 52	18 03	05 50	18 05	05 48	18 07	05 46	18 09	05 43	18 12
13	05 53	17 59	05 51	18 01	05 50	18 02	05 48	18 03	05 47	18 05	05 45	18 06
18	05 51	17 57	05 50	17 58	05 50	17 59	05 49	17 59	05 48	18 00	05 47	18 01
23	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56
28	05 47	17 54	05 48	17 53	05 49	17 53	05 49	17 52	05 50	17 51	05 51	17 50
Oct. 3	05 46	17 52	05 47	17 51	05 49	17 50	05 50	17 48	05 51	17 47	05 53	17 45
8	05 44	17 51	05 46	17 49	05 48	17 47	05 50	17 45	05 53	17 42	05 55	17 40
13	05 43	17 50	05 46	17 47	05 48	17 44	05 51	17 41	05 54	17 38	05 57	17 35
18	05 42	17 49	05 45	17 45	05 49	17 42	05 52	17 38	05 56	17 34	05 59	17 31
23	05 41	17 48	05 45	17 44	05 49	17 40	05 53	17 35	05 58	17 31	06 02	17 26
28	05 40	17 47	05 45	17 43	05 50	17 38	05 55	17 33	06 00	17 28	06 05	17 22
Nov. 2	05 40	17 47	05 45	17 42	05 51	17 36	05 56	17 31	06 02	17 25	06 08	17 19
7	05 40	17 47	05 46	17 41	05 52	17 35	05 58	17 29	06 04	17 23	06 11	17 16
12	05 41	17 48	05 47	17 41	05 53	17 35	06 00	17 28	06 07	17 21	06 14	17 14
17	05 41	17 49	05 48	17 42	05 55	17 35	06 02	17 27	06 10	17 20	06 18	17 12
22	05 42	17 50	05 50	17 42	05 57	17 35	06 05	17 27	06 13	17 19	06 21	17 11
27	05 44	17 51	05 52	17 43	05 59	17 36	06 07	17 28	06 16	17 19	06 25	17 10
Dec. 2	05 46	17 53	05 54	17 45	06 02	17 37	06 10	17 28	06 19	17 19	06 28	17 10
7	05 48	17 55	05 56	17 47	06 04	17 38	06 13	17 30	06 22	17 20	06 32	17 11
12	05 50	17 57	05 58	17 49	06 07	17 40	06 16	17 31	06 25	17 22	06 35	17 12
17	05 52	18 00	06 01	17 51	06 10	17 42	06 19	17 33	06 28	17 24	06 38	17 14
22	05 55	18 02	06 03	17 54	06 12	17 45	06 21	17 36	06 31	17 26	06 41	17 16
27	05 57	18 05	06 06	17 56	06 15	17 47	06 24	17 38	06 33	17 29	06 43	17 19
Jan. 1	06 00	18 07	06 08	17 59	06 17	17 50	06 26	17 41	06 35	17 32	06 45	17 22

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date	30° N.		32° N.		34° N.		36° N.		38° N.		40° N.	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan. 1	06 56	17 11	07 01	17 07	07 05	17 02	07 11	16 57	07 16	16 51	07 22	16 45
6	06 57	17 15	07 01	17 10	07 06	17 06	07 11	17 01	07 16	16 55	07 22	16 50
11	06 57	17 19	07 01	17 15	07 06	17 10	07 11	17 05	07 16	17 00	07 21	16 55
16	06 57	17 23	07 01	17 19	07 05	17 15	07 10	17 10	07 15	17 05	07 20	17 00
21	06 55	17 27	06 59	17 23	07 03	17 19	07 08	17 15	07 12	17 11	07 17	17 06
26	06 54	17 32	06 57	17 29	07 01	17 24	07 05	17 20	07 09	17 16	07 14	17 12
31	06 51	17 36	06 54	17 33	06 58	17 29	07 02	17 26	07 06	17 22	07 10	17 18
Feb. 5	06 48	17 40	06 51	17 37	06 54	17 34	06 58	17 31	07 01	17 27	07 05	17 24
10	06 44	17 44	06 47	17 42	06 50	17 39	06 53	17 36	06 56	17 33	06 59	17 30
15	06 40	17 48	06 43	17 46	06 45	17 44	06 48	17 41	06 50	17 38	06 53	17 35
20	06 36	17 52	06 38	17 50	06 40	17 48	06 42	17 46	06 44	17 44	06 47	17 41
25	06 31	17 56	06 32	17 54	06 34	17 53	06 36	17 51	06 38	17 49	06 40	17 47
Mar. 2	06 25	18 00	06 27	17 58	06 28	17 57	06 29	17 56	06 31	17 54	06 32	17 53
7	06 20	18 03	06 21	18 02	06 22	18 01	06 23	18 00	06 24	17 59	06 25	17 58
12	06 14	18 06	06 14	18 06	06 15	18 05	06 16	18 05	06 16	18 04	06 17	18 03
17	06 08	18 09	06 08	18 09	06 08	18 09	06 09	18 09	06 09	18 09	06 09	18 09
22	06 02	18 12	06 02	18 13	06 02	18 13	06 01	18 13	06 01	18 13	06 01	18 14
27	05 56	18 15	05 55	18 16	05 55	18 17	05 54	18 17	05 53	18 18	05 53	18 19
Apr. 1	05 50	18 18	05 49	18 19	05 48	18 20	05 47	18 22	05 46	18 23	05 45	18 24
6	05 44	18 21	05 43	18 23	05 41	18 24	05 40	18 26	05 38	18 27	05 37	18 29
11	05 38	18 25	05 36	18 26	05 35	18 28	05 33	18 30	05 31	18 32	05 29	18 34
16	05 33	18 28	05 30	18 30	05 28	18 32	05 26	18 34	05 24	18 37	05 21	18 39
21	05 27	18 31	05 25	18 33	05 22	18 36	05 20	18 38	05 17	18 41	05 14	18 44
26	05 22	18 34	05 19	18 37	05 17	18 40	05 14	18 43	05 10	18 46	05 07	18 49
May 1	05 18	18 37	05 14	18 40	05 11	18 43	05 08	18 47	05 04	18 50	05 01	18 54
6	05 13	18 40	05 10	18 44	05 06	18 47	05 03	18 51	04 59	18 55	04 55	18 59
11	05 09	18 44	05 06	18 47	05 02	18 51	04 58	18 55	04 54	19 00	04 49	19 04
16	05 06	18 47	05 02	18 51	04 58	18 55	04 54	18 59	04 49	19 04	04 44	19 09
21	05 03	18 50	04 59	18 54	04 55	18 59	04 50	19 03	04 45	19 08	04 40	19 14
26	05 01	18 53	04 57	18 57	04 52	19 02	04 47	19 07	04 42	19 12	04 37	19 18
31	05 00	18 56	04 55	19 00	04 50	19 05	04 45	19 10	04 40	19 16	04 34	19 22
June 5	04 59	18 58	04 54	19 03	04 49	19 08	04 44	19 13	04 38	19 19	04 32	19 25
10	04 58	19 01	04 53	19 05	04 48	19 11	04 43	19 16	04 37	19 22	04 31	19 28
15	04 58	19 02	04 53	19 07	04 48	19 13	04 43	19 18	04 37	19 24	04 31	19 30
20	04 59	19 04	04 54	19 09	04 49	19 14	04 43	19 20	04 37	19 26	04 31	19 32
25	05 00	19 05	04 55	19 10	04 50	19 15	04 44	19 21	04 39	19 26	04 32	19 33
30	05 02	19 05	04 57	19 10	04 52	19 15	04 46	19 21	04 40	19 27	04 34	19 33
July 5	05 04	19 05	04 59	19 10	04 54	19 15	04 49	19 20	04 43	19 25	04 37	19 32
10	05 06	19 04	05 02	19 09	04 57	19 14	04 51	19 19	04 46	19 24	04 40	19 30
15	05 09	19 03	05 04	19 07	05 00	19 12	04 55	19 17	04 49	19 22	04 43	19 28
20	05 12	19 01	05 07	19 05	05 03	19 10	04 58	19 14	04 53	19 19	04 47	19 25
25	05 15	18 58	05 10	19 02	05 06	19 06	05 02	19 11	04 57	19 16	04 52	19 21
30	05 18	18 55	05 14	18 59	05 10	19 03	05 05	19 07	05 01	19 11	04 56	19 16
Aug. 4	05 21	18 51	05 17	18 55	05 13	18 58	05 09	19 02	05 05	19 06	05 01	19 11
9	05 24	18 47	05 20	18 50	05 17	18 54	05 13	18 57	05 10	19 01	05 05	19 05
14	05 27	18 42	05 24	18 45	05 21	18 48	05 17	18 52	05 14	18 55	05 10	18 58
19	05 29	18 37	05 27	18 40	05 24	18 43	05 21	18 45	05 18	18 48	05 15	18 52
24	05 32	18 32	05 30	18 34	05 28	18 37	05 25	18 39	05 23	18 42	05 20	18 44
29	05 35	18 26	05 33	18 28	05 31	18 30	05 29	18 32	05 27	18 34	05 25	18 37
Sept. 3	05 38	18 21	05 36	18 22	05 35	18 24	05 33	18 25	05 31	18 27	05 29	18 29
8	05 41	18 14	05 39	18 16	05 38	18 17	05 37	18 18	05 35	18 19	05 34	18 21
13	05 43	18 08	05 42	18 09	05 42	18 10	05 41	18 11	05 40	18 12	05 39	18 13
18	05 46	18 02	05 45	18 02	05 45	18 03	05 44	18 03	05 44	18 04	05 43	18 04
23	05 49	17 56	05 49	17 56	05 48	17 56	05 48	17 56	05 48	17 56	05 48	17 56
28	05 51	17 50	05 52	17 49	05 52	17 49	05 52	17 49	05 53	17 48	05 53	17 48
Oct. 3	05 54	17 43	05 55	17 43	05 56	17 42	05 56	17 41	05 57	17 41	05 58	17 40
8	05 57	17 38	05 58	17 36	05 59	17 35	06 00	17 34	06 02	17 33	06 03	17 32
13	06 00	17 32	06 02	17 30	06 03	17 29	06 05	17 27	06 06	17 26	06 08	17 24
18	06 04	17 26	06 05	17 25	06 07	17 23	06 09	17 21	06 11	17 19	06 13	17 17
23	06 07	17 21	06 09	17 19	06 11	17 17	06 14	17 15	06 16	17 12	06 19	17 10
28	06 11	17 17	06 13	17 14	06 16	17 12	06 18	17 09	06 21	17 06	06 24	17 03
Nov. 2	06 14	17 12	06 17	17 10	06 20	17 07	06 23	17 04	06 26	17 00	06 30	16 57
7	06 18	17 09	06 21	17 06	06 25	17 02	06 28	16 59	06 32	16 55	06 36	16 51
12	06 22	17 06	06 26	17 02	06 29	16 59	06 33	16 55	06 37	16 51	06 41	16 47
17	06 26	17 03	06 30	16 59	06 34	16 56	06 38	16 51	06 42	16 47	06 47	16 42
22	06 31	17 01	06 35	16 57	06 39	16 53	06 43	16 49	06 48	16 44	06 53	16 39
27	06 35	17 00	06 39	16 56	06 43	16 52	06 48	16 47	06 53	16 42	06 58	16 37
Dec. 2	06 39	17 00	06 43	16 55	06 48	16 51	06 53	16 46	06 58	16 41	07 03	16 35
7	06 43	17 00	06 47	16 55	06 52	16 51	06 57	16 46	07 02	16 40	07 08	16 35
12	06 46	17 01	06 51	16 56	06 56	16 51	07 01	16 46	07 06	16 41	07 12	16 35
17	06 49	17 03	06 54	16 58	06 59	16 53	07 04	16 48	07 10	16 42	07 16	16 36
22	06 52	17 05	06 57	17 00	07 02	16 55	07 07	16 50	07 13	16 44	07 19	16 38
27	06 54	17 08	06 59	17 03	07 04	16 58	07 09	16 53	07 15	16 47	07 21	16 41
Jan. 1	06 56	17 11	07 01	17 06	07 05	17 01	07 11	16 56	07 16	16 51	07 22	16 45

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date	42° N.		44° N.		46° N.		48° N.		50° N.		52° N.	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan. 1	07 28	16 39	07 35	16 32	07 42	16 25	07 50	16 17	07 59	16 09	08 08	15 59
6	07 28	16 44	07 35	16 37	07 42	16 30	07 49	16 23	07 58	16 14	08 07	16 05
11	07 27	16 49	07 33	16 43	07 40	16 36	07 48	16 29	07 56	16 21	08 04	16 12
16	07 25	16 54	07 31	16 49	07 38	16 42	07 45	16 35	07 52	16 28	08 01	16 19
21	07 22	17 01	07 28	16 55	07 34	16 49	07 40	16 43	07 48	16 35	07 55	16 28
26	07 19	17 07	07 24	17 02	07 29	16 56	07 35	16 50	07 42	16 44	07 49	16 36
31	07 14	17 13	07 19	17 08	07 24	17 03	07 29	16 58	07 35	16 52	07 42	16 46
Feb. 5	07 09	17 20	07 13	17 15	07 18	17 11	07 23	17 06	07 28	17 01	07 34	16 55
10	07 03	17 26	07 07	17 22	07 11	17 18	07 15	17 14	07 20	17 09	07 25	17 04
15	06 56	17 32	07 00	17 29	07 03	17 26	07 07	17 22	07 11	17 18	07 16	17 13
20	06 49	17 39	06 52	17 36	06 55	17 33	06 58	17 30	07 02	17 26	07 06	17 23
25	06 42	17 45	06 44	17 43	06 47	17 40	06 49	17 38	06 52	17 35	06 55	17 32
Mar. 2	06 34	17 51	06 36	17 49	06 38	17 47	06 40	17 45	06 42	17 43	06 44	17 41
7	06 26	17 57	06 27	17 56	06 29	17 54	06 30	17 53	06 32	17 51	06 33	17 50
12	06 18	18 03	06 18	18 02	06 19	18 01	06 20	18 00	06 21	18 00	06 22	17 59
17	06 09	18 08	06 09	18 08	06 10	18 08	06 10	18 08	06 10	18 08	06 10	18 07
22	06 01	18 14	06 00	18 14	06 00	18 15	06 00	18 15	05 59	18 16	05 59	18 16
27	05 52	18 20	05 51	18 20	05 50	18 21	05 49	18 22	05 48	18 23	05 47	18 25
Apr. 1	05 43	18 25	05 42	18 27	05 41	18 28	05 39	18 30	05 38	18 31	05 36	18 33
6	05 35	18 31	05 33	18 33	05 31	18 35	05 29	18 37	05 27	18 39	05 24	18 42
11	05 27	18 36	05 24	18 39	05 22	18 41	05 19	18 44	05 16	18 47	05 13	18 50
16	05 19	18 42	05 16	18 45	05 13	18 48	05 09	18 51	05 06	18 55	05 02	18 59
21	05 11	18 47	05 08	18 51	05 04	18 54	05 00	18 58	04 56	19 03	04 51	19 07
26	05 03	18 53	05 00	18 57	04 56	19 01	04 51	19 05	04 46	19 10	04 41	19 16
May 1	04 57	18 58	04 52	19 03	04 48	19 07	04 43	19 13	04 37	19 18	04 31	19 24
6	04 50	19 04	04 45	19 09	04 40	19 14	04 35	19 20	04 28	19 26	04 22	19 33
11	04 44	19 09	04 39	19 14	04 33	19 20	04 27	19 26	04 20	19 33	04 13	19 41
16	04 39	19 14	04 33	19 20	04 27	19 26	04 20	19 33	04 13	19 40	04 05	19 48
21	04 34	19 19	04 28	19 25	04 22	19 32	04 15	19 39	04 07	19 47	03 58	19 56
26	04 31	19 24	04 24	19 30	04 17	19 37	04 10	19 45	04 01	19 53	03 52	20 03
31	04 28	19 28	04 21	19 35	04 14	19 42	04 06	19 50	03 57	19 59	03 47	20 09
June 5	04 25	19 32	04 18	19 39	04 11	19 46	04 03	19 55	03 53	20 04	03 43	20 14
10	04 24	19 35	04 17	19 42	04 09	19 50	04 01	19 58	03 51	20 08	03 41	20 18
15	04 24	19 37	04 16	19 44	04 09	19 52	04 00	20 01	03 50	20 11	03 39	20 22
20	04 24	19 39	04 17	19 46	04 09	19 54	04 00	20 03	03 50	20 13	03 39	20 23
25	04 25	19 40	04 18	19 47	04 10	19 55	04 01	20 04	03 52	20 13	03 41	20 24
30	04 27	19 39	04 20	19 47	04 12	19 55	04 04	20 03	03 54	20 13	03 43	20 23
July 5	04 30	19 39	04 23	19 46	04 15	19 53	04 07	20 02	03 58	20 11	03 47	20 21
10	04 33	19 37	04 27	19 44	04 19	19 51	04 11	19 59	04 02	20 08	03 52	20 18
15	04 37	19 34	04 31	19 41	04 24	19 48	04 16	19 55	04 07	20 04	03 57	20 14
20	04 42	19 31	04 35	19 37	04 29	19 44	04 21	19 51	04 13	19 59	04 04	20 08
25	04 46	19 26	04 40	19 32	04 34	19 38	04 27	19 45	04 19	19 53	04 11	20 01
30	04 51	19 21	04 46	19 27	04 40	19 33	04 33	19 39	04 26	19 46	04 18	19 54
Aug. 4	04 56	19 15	04 51	19 20	04 45	19 26	04 40	19 32	04 33	19 38	04 26	19 45
9	05 01	19 09	04 57	19 14	04 52	19 19	04 46	19 24	04 40	19 30	04 34	19 36
14	05 06	19 02	05 02	19 06	04 58	19 11	04 53	19 16	04 48	19 21	04 42	19 26
19	05 12	18 55	05 08	18	05 04	19 02	05 00	19 07	04 55	19 11	04 50	19 16
24	05 17	18 47	05 14	18 56	05 10	18 54	05 07	18 57	05 03	19 01	04 58	19 06
29	05 22	18 39	05 19	18 42	05 16	18 45	05 13	18 48	05 10	18 51	05 06	18 55
Sept. 3	05 27	18 31	05 25	18 33	05 23	18 35	05 20	18 38	05 17	18 40	05 14	18 43
8	05 32	18 22	05 31	18 24	05 29	18 26	05 27	18 28	05 25	18 30	05 23	18 32
13	05 38	18 14	05 36	18 15	05 35	18 16	05 34	18 17	05 32	18 19	05 31	18 20
18	05 43	18 05	05 42	18 06	05 41	18 06	05 41	18 07	05 40	18 08	05 39	18 09
23	05 48	17 56	05 48	17 56	05 48	17 56	05 47	17 57	05 47	17 57	05 47	17 57
28	05 53	17 47	05 54	17 47	05 54	17 47	05 54	17 46	05 55	17 46	05 55	17 45
Oct. 3	05 59	17 39	06 00	17 38	06 00	17 37	06 01	17 36	06 03	17 35	06 04	17 34
8	06 04	17 30	06 06	17 29	06 07	17 27	06 09	17 26	06 10	17 24	06 12	17 22
13	06 10	17 22	06 12	17 20	06 14	17 18	06 16	17 16	06 18	17 14	06 21	17 11
18	06 15	17 14	06 18	17 12	06 20	17 09	06 23	17 07	06 26	17 04	06 29	17 00
23	06 21	17 07	06 24	17 04	06 27	17 01	06 31	16 57	06 34	16 54	06 38	16 50
28	06 27	17 00	06 31	16 56	06 34	16 53	06 38	16 49	06 42	16 44	06 47	16 40
Nov. 2	06 33	16 53	06 37	16 49	06 41	16 45	06 46	16 41	06 51	16 36	06 56	16 30
7	06 40	16 47	06 44	16 43	06 49	16 38	06 54	16 33	06 59	16 28	07 05	16 22
12	06 46	16 42	06 51	16 37	06 56	16 32	07 01	16 26	07 07	16 20	07 14	16 14
17	06 52	16 38	06 57	16 32	07 03	16 27	07 09	16 21	07 15	16 14	07 23	16 07
22	06 58	16 34	07 04	16 28	07 10	16 22	07 16	16 16	07 23	16 08	07 31	16 00
27	07 04	16 31	07 10	16 25	07 16	16 19	07 23	16 12	07 31	16 04	07 39	15 55
Dec. 2	07 09	16 29	07 15	16 23	07 22	16 16	07 30	16 09	07 38	16 01	07 47	15 52
7	07 14	16 28	07 21	16 22	07 28	16 15	07 35	16 07	07 44	15 59	07 53	15 49
12	07 18	16 29	07 25	16 22	07 32	16 15	07 40	16 07	07 49	15 58	07 59	15 48
17	07 22	16 30	07 29	16 23	07 36	16 16	07 44	16 08	07 53	15 59	08 03	15 49
22	07 25	16 32	07 32	16 25	07 39	16 18	07 47	16 10	07 56	16 01	08 06	15 51
27	07 27	16 35	07 34	16 28	07 41	16 21	07 49	16 13	07 58	16 04	08 08	15 54
Jan. 1	07 28	16 39	07 35	16 32	07 42	16 25	07 50	16 17	07 59	16 08	08 08	15 59

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date		54° N.		56° N.		58° N.		60° N.		62° N.		64° N.	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan.	1	08 19	15 48	08 31	15 36	08 46	15 22	09 02	15 05	09 23	14 44	09 50	14 18
	6	08 17	15 54	08 29	15 43	08 43	15 29	08 59	15 13	09 19	14 53	09 44	14 28
	11	08 14	16 02	08 26	15 51	08 39	15 38	08 54	15 23	09 12	15 04	09 35	14 42
	16	08 10	16 10	08 20	16 00	08 32	15 47	08 47	15 33	09 03	15 17	09 24	14 56
	21	08 04	16 19	08 14	16 09	08 25	15 58	08 38	15 45	08 53	15 30	09 11	15 12
	26	07 57	16 29	08 06	16 20	08 16	16 10	08 28	15 58	08 42	15 44	08 58	15 28
	31	07 49	16 38	07 57	16 30	08 06	16 21	08 17	16 11	08 29	15 59	08 43	15 45
Feb.	5	07 40	16 48	07 48	16 41	07 56	16 33	08 05	16 24	08 16	16 13	08 28	16 01
	10	07 31	16 58	07 37	16 52	07 44	16 45	07 52	16 37	08 01	16 28	08 12	16 17
	15	07 21	17 09	07 26	17 03	07 32	16 57	07 39	16 50	07 47	16 43	07 56	16 34
	20	07 10	17 19	07 14	17 14	07 19	17 09	07 25	17 03	07 32	16 57	07 39	16 50
	25	06 59	17 29	07 02	17 25	07 06	17 21	07 11	17 16	07 16	17 11	07 22	17 05
Mar.	2	06 47	17 38	06 50	17 36	06 53	17 33	06 56	17 29	07 00	17 25	07 05	17 21
	7	06 35	17 48	06 37	17 46	06 39	17 44	06 42	17 42	06 45	17 39	06 48	17 36
	12	06 23	17 58	06 24	17 57	06 25	17 55	06 27	17 54	06 28	17 53	06 30	17 51
	17	06 11	18 07	06 11	18 07	06 11	18 07	06 12	18 06	06 12	18 06	06 13	18 06
	22	05 58	18 17	05 58	18 17	05 57	18 18	05 57	18 19	05 56	18 20	05 55	18 21
	27	05 46	18 26	05 45	18 27	05 43	18 29	05 41	18 31	05 40	18 33	05 37	18 35
Apr.	1	05 34	18 35	05 32	18 38	05 29	18 40	05 26	18 43	05 23	18 46	05 20	18 50
	6	05 22	18 45	05 18	18 48	05 15	18 51	05 11	18 55	05 07	19 00	05 02	19 05
	11	05 09	18 54	05 06	18 58	05 01	19 02	04 56	19 07	04 51	19 13	04 44	19 20
	16	04 58	19 03	04 53	19 08	04 48	19 14	04 42	19 20	04 35	19 27	04 27	19 35
	21	04 46	19 13	04 40	19 18	04 34	19 25	04 27	19 32	04 19	19 41	04 09	19 50
	26	04 35	19 22	04 28	19 29	04 21	19 36	04 13	19 45	04 03	19 54	03 52	20 06
May	1	04 24	19 31	04 17	19 39	04 08	19 47	03 59	19 57	03 48	20 08	03 35	20 22
	6	04 14	19 40	04 06	19 49	03 56	19 58	03 46	20 09	03 33	20 22	03 18	20 38
	11	04 05	19 49	03 56	19 58	03 45	20 09	03 33	20 22	03 18	20 36	03 01	20 54
	16	03 56	19 58	03 46	20 08	03 34	20 20	03 21	20 33	03 05	20 50	02 45	21 10
	21	03 48	20 06	03 37	20 17	03 25	20 30	03 10	20 45	02 52	21 03	02 29	21 26
	26	03 42	20 13	03 30	20 25	03 16	20 39	03 00	20 56	02 40	21 16	02 15	21 42
	31	03 36	20 20	03 23	20 33	03 09	20 47	02 51	21 05	02 30	21 27	02 01	21 56
June	5	03 32	20 26	03 18	20 39	03 03	20 55	02 44	21 14	02 21	21 37	01 49	22 09
	10	03 29	20 30	03 15	20 44	02 59	21 00	02 39	21 20	02 14	21 45	01 40	22 20
	15	03 27	20 34	03 13	20 48	02 57	21 05	02 36	21 25	02 10	21 51	01 33	22 28
	20	03 27	20 36	03 13	20 50	02 56	21 07	02 36	21 27	02 09	21 54	01 31	22 32
	25	03 29	20 36	03 14	20 51	02 58	21 07	02 37	21 28	02 11	21 54	01 33	22 32
	30	03 31	20 36	03 17	20 49	03 01	21 06	02 41	21 26	02 15	21 51	01 39	22 27
July	5	03 35	20 33	03 22	20 47	03 06	21 02	02 47	21 22	02 22	21 46	01 49	22 19
	10	03 41	20 29	03 27	20 42	03 12	20 57	02 54	21 15	02 31	21 38	02 01	22 08
	15	03 47	20 24	03 34	20 37	03 20	20 51	03 03	21 08	02 42	21 28	02 14	21 55
	20	03 54	20 18	03 42	20 29	03 29	20 43	03 13	20 58	02 54	21 17	02 29	21 41
	25	04 01	20 11	03 51	20 21	03 38	20 33	03 24	20 47	03 06	21 05	02 45	21 26
	30	04 09	20 02	04 00	20 12	03 48	20 23	03 35	20 36	03 20	20 51	03 01	21 10
Aug.	4	04 18	19 53	04 09	20 02	03 59	20 12	03 47	20 24	03 33	20 37	03 17	20 53
	9	04 27	19 43	04 18	19 51	04 09	20 00	03 59	20 10	03 47	20 22	03 32	20 36
	14	04 35	19 33	04 28	19 40	04 20	19 48	04 11	19 57	04 00	20 07	03 48	20 19
	19	04 44	19 22	04 38	19 28	04 31	19 35	04 23	19 43	04 14	19 52	04 03	20 02
	24	04 53	19 10	04 48	19 16	04 42	19 21	04 35	19 28	04 27	19 36	04 18	19 45
	29	05 02	18 59	04 58	19 03	04 53	19 08	04 47	19 13	04 40	19 20	04 33	19 27
Sept.	3	05 11	18 47	05 07	18 50	05 03	18 54	04 59	18 58	04 54	19 04	04 48	19 09
	8	05 20	18 34	05 17	18 37	05 14	18 40	05 11	18 43	05 07	18 47	05 02	18 52
	13	05 29	18 22	05 27	18 24	05 25	18 26	05 22	18 28	05 20	18 31	05 16	18 34
	18	05 38	18 09	05 37	18 11	05 35	18 12	05 34	18 13	05 32	18 14	05 31	18 16
	23	05 47	17 57	05 46	17 57	05 46	17 57	05 46	17 58	05 45	17 58	05 45	17 58
	28	05 56	17 45	05 56	17 44	05 57	17 43	05 58	17 43	05 58	17 42	05 59	17 41
Oct.	3	06 05	17 32	06 06	17 31	06 08	17 29	06 09	17 28	06 11	17 26	06 13	17 23
	8	06 14	17 20	06 16	17 18	06 19	17 15	06 21	17 13	06 25	17 09	06 28	17 06
	13	06 23	17 08	06 26	17 05	06 30	17 02	06 34	16 58	06 38	16 53	06 43	16 48
	18	06 33	16 57	06 37	16 53	06 41	16 48	06 46	16 43	06 51	16 38	06 58	16 31
	23	06 42	16 45	06 47	16 41	06 53	16 35	06 59	16 29	07 05	16 22	07 13	16 14
	28	06 52	16 35	06 58	16 29	07 04	16 23	07 11	16 15	07 19	16 07	07 29	15 58
Nov.	2	07 02	16 24	07 08	16 18	07 16	16 11	07 24	16 02	07 33	15 53	07 45	15 42
	7	07 12	16 15	07 19	16 08	07 27	15 59	07 37	15 50	07 48	15 39	08 01	15 26
	12	07 21	16 06	07 30	15 58	07 39	15 49	07 50	15 38	08 02	15 25	08 17	15 11
	17	07 31	15 58	07 40	15 49	07 50	15 39	08 02	15 27	08 16	15 13	08 33	14 56
	22	07 40	15 52	07 50	15 42	08 01	15 30	08 14	15 17	08 30	15 02	08 49	14 43
	27	07 49	15 46	07 59	15 35	08 12	15 23	08 26	15 09	08 43	14 52	09 04	14 31
Dec.	2	07 57	15 42	08 08	15 30	08 21	15 17	08 36	15 02	08 55	14 43	09 18	14 20
	7	08 04	15 39	08 16	15 27	08 29	15 13	08 46	14 57	09 05	14 37	09 31	14 12
	12	08 10	15 38	08 22	15 25	08 36	15 11	08 53	14 54	09 14	14 33	09 41	14 06
	17	08 14	15 38	08 27	15 25	08 41	15 10	08 59	14 53	09 20	14 32	09 48	14 03
	22	08 17	15 40	08 30	15 27	08 45	15 12	09 02	14 55	09 24	14 33	09 53	14 05
	27	08 19	15 43	08 32	15 30	08 46	15 16	09 04	14 58	09 25	14 37	09 53	14 09
Jan.	1	08 19	15 48	08 31	15 36	08 46	15 21	09 03	15 04	09 23	14 44	09 50	14 17

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date	66° N.		68° N.		70° N.		72° N.		74° N.		76° N.	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan. 1	10 28	13 39	Rises Jan. 3		Sun does not rise until Jan. 17.		Sun does not rise until Jan. 26.		Sun does not rise until Feb. 2.		Sun does not rise until Feb. 9.	
6	10 18	13 54	11 23	12 49								
11	10 05	14 11	10 54	13 22								
16	09 51	14 29	10 29	13 51								
21	09 35	14 49	10 06	14 17	10 58	13 25						
26	09 18	15 08	09 44	14 42	10 22	14 04	11 45	12 42				
31	09 01	15 27	09 23	15 05	09 52	14 36	10 38	13 50				
Feb. 5	08 43	15 46	09 01	15 28	09 25	15 04	09 58	14 31	10 54	13 35		
10	08 25	16 05	08 40	15 50	09 00	15 30	09 25	15 05	10 02	14 28	11 13	13 18
15	08 06	16 23	08 19	16 10	08 35	15 55	08 55	15 35	09 22	15 08	10 04	14 27
20	07 48	16 41	07 58	16 31	08 11	16 18	08 27	16 02	08 48	15 42	09 16	15 13
25	07 29	16 58	07 37	16 50	07 47	16 41	08 00	16 29	08 15	16 13	08 36	15 52
Mar. 2	07 10	17 16	07 16	17 10	07 24	17 02	07 33	16 53	07 44	16 42	07 59	16 28
7	06 51	17 32	06 56	17 28	07 01	17 23	07 07	17 17	07 15	17 10	07 25	17 00
12	06 32	17 49	06 35	17 47	06 38	17 44	06 41	17 41	06 45	17 37	06 51	17 32
17	06 13	18 05	06 14	18 05	06 15	18 04	06 15	18 04	06 16	18 03	06 18	18 02
22	05 54	18 22	05 53	18 23	05 51	18 25	05 50	18 27	05 47	18 29	05 45	18 33
27	05 35	18 38	05 32	18 41	05 28	18 45	05 24	18 50	05 18	18 56	05 11	19 03
Apr. 1	05 15	18 54	05 11	19 00	05 05	19 06	04 58	19 13	04 49	19 23	04 37	19 35
6	04 56	19 11	04 49	19 18	04 41	19 27	04 31	19 37	04 18	19 51	04 01	20 09
11	04 37	19 28	04 28	19 37	04 17	19 48	04 04	20 02	03 46	20 20	03 23	20 45
16	04 17	19 45	04 06	19 56	03 52	20 10	03 35	20 28	03 12	20 53	02 39	21 27
21	03 58	20 02	03 44	20 16	03 27	20 34	03 05	20 57	02 35	21 29	01 46	22 23
26	03 38	20 20	03 22	20 37	03 01	20 59	02 32	21 29	01 50	22 15	.. ..	.. ..
May 1	03 19	20 38	02 59	20 59	02 33	21 26	01 55	22 06	00 37	.. ..	.. ..	.. ..
6	02 59	20 57	02 35	21 22	02 02	21 57	01 05	23 01	.. ..	.. ..	.. ..	.. ..
11	02 39	21 16	02 10	21 47	01 26	22 35	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
16	02 19	21 37	01 43	22 14	00 28	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
21	01 59	21 57	01 12	22 48	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
26	01 39	22 19	00 23	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
31	01 18	22 41	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
June 5	00 56	23 05	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
10	00 30	23 35	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
15	Sun rises		Sun rises		Sun rises		Sun rises		Sun rises		Sun rises	
20	June 12;		May 26;		May 16;		May 8;		May 1;		April 25;	
25	sets June 30.		sets July 17.		sets July 27.		sets Aug. 4.		sets Aug. 11.		sets Aug. 18.	
30	.. ..	23 51	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
July 5	00 46	23 19	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
10	01 11	22 55	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
15	01 34	22 34	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
20	01 56	22 13	00 54	23 10	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
25	02 16	21 53	01 33	22 34	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
30	02 36	21 33	02 03	22 06	01 03	23 00	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Aug. 4	02 56	21 13	02 28	21 40	01 48	22 18	.. ..	23 45	.. ..	.. ..	.. ..	.. ..
9	03 15	20 54	02 52	21 16	02 21	21 45	01 32	22 30	.. ..	.. ..	.. ..	.. ..
14	03 33	20 34	03 14	20 52	02 49	21 16	02 15	21 48	01 13	22 43	.. ..	.. ..
19	03 50	20 15	03 35	20 30	03 15	20 49	02 49	21 14	02 10	21 50	00 48	22 58
24	04 07	19 55	03 55	20 08	03 39	20 23	03 18	20 43	02 50	21 10	02 06	21 50
29	04 24	19 36	04 14	19 46	04 01	19 58	03 45	20 14	03 23	20 34	02 53	21 02
Sept. 3	04 41	19 16	04 32	19 24	04 22	19 34	04 10	19 46	03 54	20 01	03 32	20 22
8	04 57	18 57	04 50	19 03	04 43	19 10	04 34	19 19	04 22	19 30	04 06	19 45
13	05 13	18 37	05 08	18 42	05 03	18 47	04 57	18 53	04 49	19 00	04 38	19 10
18	05 28	18 18	05 26	18 20	05 23	18 23	05 19	18 27	05 15	18 31	05 09	18 36
23	05 44	17 59	05 43	17 59	05 43	18 00	05 42	18 01	05 40	18 02	05 38	18 03
28	06 00	17 40	06 01	17 39	06 02	17 37	06 04	17 35	06 06	17 33	06 08	17 30
Oct. 3	06 16	17 21	06 19	17 18	06 22	17 14	06 26	17 10	06 32	17 04	06 38	16 57
8	06 32	17 02	06 37	16 57	06 42	16 51	06 49	16 44	06 58	16 35	07 09	16 24
13	06 48	16 43	06 55	16 36	07 03	16 28	07 13	16 18	07 25	16 05	07 42	15 48
18	07 05	16 24	07 14	16 15	07 24	16 04	07 38	15 51	07 54	15 34	08 17	15 11
23	07 22	16 05	07 33	15 54	07 47	15 41	08 03	15 24	08 26	15 01	08 57	14 30
28	07 40	15 47	07 53	15 33	08 10	15 17	08 31	14 55	09 00	14 26	09 46	13 40
Nov. 2	07 58	15 28	08 14	15 12	08 34	14 52	09 01	14 24	09 42	13 44	11 17	12 08
7	08 16	15 10	08 35	14 51	09 00	14 26	09 36	13 50	10 41	12 45	.. ..	.. ..
12	08 35	14 53	08 58	14 30	09 29	13 58	10 19	13 08	.. ..	.. ..	.. ..	.. ..
17	08 54	14 35	09 21	14 08	10 01	13 28	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
22	09 13	14 19	09 46	13 46	10 42	12 49	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
27	09 31	14 03	10 12	13 23	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Dec. 2	09 49	13 49	10 41	12 57	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
7	10 06	13 36	11 17	12 26	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
12	10 20	13 27	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
17	10 30	13 22	Sun does not rise after Dec. 9.		Sun does not rise after Nov. 25.		Sun does not rise after Nov. 16.		Sun does not rise after Nov. 8.		Sun does not rise after Nov. 2.	
22	10 35	13 22										
27	10 35	13 28										
Jan. 1	10 29	13 39	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date		0°		5° S.		10° S.		15° S.		20° S.		25° S.	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan.	1	06 00	18 07	05 51	18 16	05 43	18 24	05 33	18 34	05 24	18 43	05 14	18 53
	6	06 02	18 10	05 54	18 18	05 45	18 26	05 36	18 35	05 27	18 44	05 17	18 54
	11	06 04	18 12	05 56	18 20	05 48	18 28	05 39	18 36	05 30	18 45	05 21	18 55
	16	06 06	18 13	05 58	18 21	05 50	18 29	05 42	18 37	05 34	18 46	05 24	18 55
	21	06 08	18 15	06 00	18 22	05 53	18 30	05 45	18 37	05 37	18 45	05 28	18 54
	26	06 09	18 16	06 02	18 23	05 55	18 30	05 48	18 37	05 40	18 45	05 32	18 53
	31	06 10	18 17	06 04	18 23	05 57	18 30	05 50	18 36	05 43	18 43	05 36	18 51
Feb.	5	06 11	18 18	06 05	18 23	05 59	18 29	05 53	18 35	05 46	18 41	05 39	18 48
	10	06 11	18 18	06 06	18 23	06 00	18 28	05 55	18 33	05 49	18 39	05 43	18 45
	15	06 11	18 18	06 06	18 22	06 02	18 27	05 57	18 31	05 52	18 36	05 46	18 42
	20	06 10	18 17	06 06	18 21	06 02	18 25	05 58	18 29	05 54	18 33	05 49	18 38
	25	06 10	18 16	06 07	18 20	06 03	18 23	06 00	18 26	05 56	18 30	05 52	18 34
Mar.	2	06 09	18 16	06 06	18 18	06 04	18 21	06 01	18 23	05 58	18 26	05 55	18 29
	7	06 08	18 14	06 06	18 16	06 04	18 18	06 02	18 20	06 00	18 22	05 57	18 24
	12	06 07	18 13	06 05	18 14	06 04	18 15	06 03	18 17	06 01	18 18	06 00	18 19
	17	06 05	18 12	06 05	18 12	06 04	18 13	06 04	18 13	06 03	18 14	06 02	18 14
	22	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 09	06 04	18 09
	27	06 02	18 09	06 03	18 08	06 04	18 07	06 05	18 06	06 06	18 05	06 07	18 04
Apr.	1	06 01	18 07	06 02	18 06	06 04	18 04	06 05	18 02	06 07	18 01	06 09	17 59
	6	05 59	18 06	06 01	18 03	06 04	18 01	06 06	17 59	06 08	17 56	06 11	17 54
	11	05 58	18 04	06 01	18 01	06 04	17 58	06 07	17 55	06 10	17 52	06 13	17 49
	16	05 57	18 03	06 00	18 00	06 04	17 56	06 07	17 52	06 11	17 48	06 15	17 44
	21	05 55	18 02	06 00	17 58	06 04	17 54	06 08	17 49	06 13	17 45	06 17	17 40
	26	05 54	18 01	05 59	17 56	06 04	17 51	06 09	17 46	06 14	17 41	06 20	17 36
May	1	05 54	18 01	05 59	17 55	06 04	17 50	06 10	17 44	06 16	17 38	06 22	17 32
	6	05 53	18 00	05 59	17 54	06 05	17 48	06 11	17 42	06 18	17 35	06 24	17 28
	11	05 53	18 00	05 59	17 53	06 06	17 47	06 12	17 40	06 19	17 33	06 27	17 25
	16	05 53	18 00	06 00	17 53	06 07	17 46	06 14	17 39	06 21	17 31	06 29	17 23
	21	05 53	18 00	06 00	17 53	06 08	17 45	06 15	17 38	06 23	17 29	06 32	17 21
	26	05 53	18 01	06 01	17 53	06 09	17 45	06 17	17 37	06 25	17 28	06 34	17 19
	31	05 54	18 01	06 02	17 53	06 10	17 45	06 19	17 37	06 27	17 28	06 37	17 18
June	5	05 55	18 02	06 03	17 54	06 11	17 45	06 20	17 37	06 29	17 27	06 39	17 18
	10	05 56	18 03	06 04	17 54	06 13	17 46	06 22	17 37	06 31	17 26	06 41	17 18
	15	05 57	18 04	06 05	17 55	06 14	17 47	06 23	17 38	06 33	17 28	06 43	17 18
	20	05 58	18 05	06 06	17 56	06 15	17 48	06 24	17 39	06 34	17 29	06 44	17 19
	25	05 59	18 06	06 08	17 58	06 16	17 49	06 25	17 40	06 35	17 30	06 45	17 20
	30	06 00	18 07	06 09	17 59	06 17	17 50	06 26	17 41	06 36	17 32	06 46	17 22
July	5	06 01	18 08	06 09	18 00	06 18	17 51	06 27	17 42	06 36	17 33	06 46	17 23
	10	06 02	18 09	06 10	18 01	06 18	17 52	06 27	17 44	06 36	17 35	06 45	17 25
	15	06 02	18 09	06 10	18 02	06 18	17 54	06 26	17 45	06 35	17 37	06 44	17 28
	20	06 03	18 10	06 10	18 02	06 18	17 55	06 26	17 47	06 34	17 39	06 43	17 30
	25	06 03	18 10	06 10	18 03	06 17	17 56	06 25	17 48	06 33	17 40	06 41	17 32
	30	06 03	18 10	06 10	18 03	06 16	17 56	06 23	17 50	06 31	17 42	06 39	17 35
Aug.	4	06 03	18 10	06 09	18 03	06 15	17 57	06 22	17 51	06 28	17 44	06 36	17 37
	9	06 02	18 09	06 08	18 03	06 14	17 58	06 20	17 52	06 26	17 46	06 32	17 39
	14	06 01	18 08	06 06	18 03	06 12	17 58	06 17	17 53	06 23	17 47	06 29	17 41
	19	06 00	18 07	06 05	18 02	06 09	17 58	06 14	17 53	06 19	17 48	06 24	17 43
	24	05 59	18 06	06 03	18 02	06 07	17 58	06 11	17 54	06 15	17 50	06 20	17 45
	29	05 58	18 04	06 01	18 01	06 04	17 58	06 08	17 54	06 11	17 51	06 15	17 47
Sept.	3	05 56	18 03	05 59	18 00	06 02	17 57	06 04	17 55	06 07	17 52	06 10	17 49
	8	05 54	18 01	05 57	17 59	05 59	17 57	06 01	17 55	06 03	17 53	06 05	17 51
	13	05 53	17 59	05 54	17 58	05 55	17 57	05 57	17 55	05 58	17 54	06 00	17 53
	18	05 51	17 57	05 52	17 57	05 52	17 56	05 53	17 56	05 54	17 55	05 54	17 54
	23	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56
	28	05 47	17 54	05 47	17 55	05 46	17 56	05 45	17 56	05 44	17 57	05 44	17 58
Oct.	3	05 46	17 52	05 44	17 54	05 43	17 55	05 42	17 57	05 40	17 59	05 38	18 00
	8	05 44	17 51	05 42	17 53	05 40	17 55	05 38	17 57	05 36	18 00	05 33	18 02
	13	05 43	17 50	05 40	17 52	05 38	17 55	05 35	17 58	05 32	18 01	05 28	18 05
	18	05 42	17 49	05 39	17 52	05 35	17 55	05 31	17 59	05 28	18 03	05 24	18 07
	23	05 41	17 48	05 37	17 52	05 33	17 56	05 29	18 00	05 24	18 05	05 19	18 10
	28	05 40	17 47	05 36	17 52	05 31	17 57	05 26	18 02	05 21	18 07	05 15	18 13
Nov.	2	05 40	17 47	05 35	17 52	05 30	17 58	05 24	18 03	05 18	18 09	05 12	18 16
	7	05 40	17 47	05 34	17 53	05 28	17 59	05 22	18 05	05 16	18 12	05 09	18 19
	12	05 41	17 48	05 34	17 54	05 28	18 01	05 21	18 08	05 14	18 15	05 06	18 22
	17	05 41	17 49	05 34	17 55	05 27	18 03	05 20	18 10	05 12	18 18	05 04	18 25
	22	05 42	17 50	05 35	17 57	05 28	18 05	05 20	18 12	05 12	18 21	05 03	18 30
	27	05 44	17 51	05 36	17 59	05 28	18 07	05 20	18 15	05 11	18 24	05 02	18 33
Dec.	2	05 46	17 53	05 38	18 01	05 29	18 09	05 21	18 18	05 12	18 27	05 02	18 37
	7	05 48	17 55	05 39	18 03	05 31	18 12	05 22	18 21	05 13	18 30	05 02	18 40
	12	05 50	17 57	05 41	18 06	05 33	18 15	05 24	18 24	05 14	18 33	05 04	18 44
	17	05 52	18 00	05 44	18 08	05 35	18 17	05 26	18 27	05 16	18 36	05 05	18 47
	22	05 55	18 02	05 46	18 11	05 37	18 20	05 28	18 29	05 18	18 39	05 08	18 49
	27	05 57	18 05	05 49	18 13	05 40	18 22	05 30	18 31	05 21	18 41	05 10	18 52
Jan.	1	06 00	18 07	05 51	18 16	05 42	18 24	05 33	18 33	05 24	18 43	05 13	18 53

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date	30° S.		32° S.		34° S.		36° S.		38° S.		40° S.	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan. 1	05 02	19 05	04 57	19 10	04 52	19 15	04 47	19 20	04 41	19 26	04 35	19 32
6	05 06	19 05	05 01	19 10	04 56	19 15	04 51	19 21	04 45	19 26	04 39	19 32
11	05 10	19 06	05 05	19 10	05 00	19 15	04 55	19 20	04 50	19 25	04 44	19 31
16	05 14	19 05	05 10	19 09	05 05	19 14	05 00	19 19	04 55	19 24	04 50	19 29
21	05 19	19 04	05 14	19 08	05 10	19 12	05 05	19 17	05 01	19 22	04 55	19 27
26	05 23	19 02	05 19	19 06	05 15	19 10	05 11	19 14	05 06	19 18	05 01	19 23
31	05 27	18 59	05 24	19 03	05 20	19 06	05 16	19 10	05 12	19 14	05 07	19 19
Feb. 5	05 32	18 56	05 29	18 59	05 25	19 02	05 22	19 06	05 18	19 10	05 14	19 14
10	05 36	18 52	05 33	18 55	05 30	18 58	05 27	19 01	05 23	19 04	05 20	19 08
15	05 40	18 48	05 38	18 50	05 35	18 53	05 32	18 56	05 29	18 59	05 26	19 02
20	05 44	18 43	05 42	18 45	05 39	18 47	05 37	18 50	05 34	18 52	05 32	18 55
25	05 48	18 38	05 46	18 40	05 44	18 42	05 42	18 44	05 40	18 46	05 38	18 48
Mar. 2	05 51	18 33	05 50	18 34	05 48	18 35	05 47	18 37	05 45	18 39	05 43	18 41
7	05 55	18 27	05 54	18 28	05 53	18 29	05 51	18 30	05 50	18 31	05 49	18 33
12	05 58	18 21	05 57	18 22	05 57	18 22	05 56	18 23	05 55	18 24	05 54	18 25
17	06 01	18 15	06 01	18 15	06 01	18 16	06 00	18 16	06 00	18 16	05 59	18 17
22	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09
27	06 07	18 03	06 08	18 03	06 08	18 02	06 09	18 02	06 09	18 01	06 10	18 01
Apr. 1	06 10	17 57	06 11	17 56	06 12	17 55	06 13	17 54	06 14	17 54	06 15	17 53
6	06 13	17 51	06 15	17 50	06 16	17 49	06 17	17 47	06 18	17 46	06 20	17 45
11	06 16	17 45	06 18	17 44	06 20	17 42	06 21	17 41	06 23	17 39	06 25	17 37
16	06 19	17 40	06 21	17 38	06 23	17 36	06 25	17 34	06 27	17 32	06 30	17 29
21	06 23	17 35	06 25	17 32	06 27	17 30	06 29	17 28	06 32	17 25	06 35	17 22
26	06 26	17 30	06 28	17 27	06 31	17 24	06 34	17 22	06 37	17 19	06 40	17 15
May 1	06 29	17 25	06 32	17 22	06 35	17 19	06 38	17 16	06 41	17 13	06 45	17 09
6	06 32	17 21	06 35	17 18	06 38	17 14	06 42	17 11	06 46	17 07	06 49	17 03
11	06 35	17 17	06 39	17 14	06 42	17 10	06 46	17 06	06 50	17 02	06 54	16 58
16	06 38	17 14	06 42	17 10	06 46	17 06	06 50	17 02	06 54	16 58	06 59	16 53
21	06 41	17 12	06 45	17 08	06 49	17 03	06 54	16 59	06 58	16 54	07 03	16 49
26	06 44	17 10	06 48	17 05	06 53	17 01	06 57	16 56	07 02	16 51	07 08	16 46
31	06 47	17 08	06 51	17 04	06 56	16 59	07 01	16 54	07 06	16 49	07 11	16 44
June 5	06 50	17 07	06 54	17 03	06 59	16 58	07 04	16 53	07 09	16 47	07 15	16 42
10	06 52	17 07	06 56	17 02	07 01	16 57	07 06	16 52	07 12	16 47	07 18	16 41
15	06 54	17 07	06 58	17 02	07 03	16 57	07 09	16 52	07 14	16 47	07 20	16 41
20	06 55	17 08	07 00	17 03	07 05	16 58	07 10	16 53	07 16	16 47	07 22	16 41
25	06 56	17 09	07 01	17 04	07 06	16 59	07 11	16 54	07 17	16 48	07 23	16 43
30	06 57	17 11	07 01	17 06	07 06	17 01	07 11	16 56	07 17	16 50	07 23	16 44
July 5	06 56	17 13	07 01	17 08	07 06	17 03	07 11	16 58	07 16	16 53	07 22	16 47
10	06 56	17 15	07 00	17 11	07 05	17 06	07 10	17 01	07 15	16 56	07 21	16 50
15	06 54	17 18	06 59	17 13	07 03	17 09	07 08	17 04	07 13	16 59	07 18	16 54
20	06 53	17 20	06 57	17 16	07 01	17 12	07 06	17 07	07 10	17 03	07 15	16 58
25	06 50	17 23	06 54	17 19	06 58	17 15	07 02	17 11	07 07	17 06	07 12	17 02
30	06 47	17 26	06 51	17 22	06 54	17 19	06 58	17 15	07 03	17 11	07 07	17 06
Aug. 4	06 43	17 29	06 47	17 26	06 50	17 22	06 54	17 19	06 58	17 15	07 02	17 11
9	06 39	17 32	06 42	17 29	06 46	17 26	06 49	17 22	06 53	17 19	06 56	17 15
14	06 35	17 35	06 38	17 32	06 41	17 29	06 44	17 26	06 47	17 23	06 50	17 20
19	06 30	17 38	06 32	17 35	06 35	17 33	06 38	17 30	06 40	17 27	06 43	17 25
24	06 25	17 40	06 27	17 38	06 29	17 36	06 31	17 34	06 34	17 32	06 36	17 29
29	06 19	17 43	06 21	17 41	06 23	17 40	06 25	17 38	06 27	17 36	06 29	17 34
Sept. 3	06 13	17 46	06 15	17 45	06 16	17 43	06 18	17 42	06 19	17 40	06 21	17 39
8	06 07	17 49	06 08	17 48	06 09	17 47	06 11	17 45	06 12	17 44	06 13	17 43
13	06 01	17 51	06 02	17 51	06 03	17 50	06 03	17 49	06 04	17 49	06 05	17 48
18	05 55	17 54	05 55	17 54	05 56	17 53	05 56	17 53	05 56	17 53	05 57	17 53
23	05 49	17 57	05 49	17 57	05 49	17 57	05 48	17 57	05 48	17 57	05 48	17 57
28	05 43	17 59	05 42	18 00	05 42	18 00	05 41	18 01	05 41	18 02	05 40	18 02
Oct. 3	05 36	18 02	05 36	18 03	05 35	18 04	05 34	18 05	05 33	18 06	05 32	18 07
8	05 30	18 05	05 29	18 07	05 28	18 08	05 27	18 09	05 25	18 11	05 24	18 12
13	05 25	18 08	05 23	18 10	05 21	18 12	05 20	18 13	05 18	18 15	05 16	18 17
18	05 19	18 12	05 17	18 14	05 15	18 16	05 13	18 18	05 11	18 20	05 08	18 23
23	05 14	18 15	05 12	18 18	05 09	18 20	05 07	18 23	05 04	18 25	05 01	18 28
28	05 09	18 19	05 07	18 22	05 04	18 24	05 01	18 27	04 58	18 31	04 55	18 34
Nov. 2	05 05	18 23	05 02	18 26	04 59	18 29	04 55	18 32	04 52	18 36	04 48	18 40
7	05 01	18 27	04 58	18 30	04 54	18 34	04 51	18 37	04 47	18 41	04 43	18 45
12	04 58	18 31	04 54	18 35	04 50	18 38	04 46	18 43	04 42	18 47	04 38	18 51
17	04 55	18 35	04 51	18 39	04 47	18 43	04 43	18 48	04 38	18 52	04 33	18 57
22	04 53	18 39	04 49	18 44	04 45	18 48	04 40	18 53	04 35	18 58	04 30	19 03
27	04 52	18 44	04 47	18 48	04 43	18 53	04 38	18 58	04 33	19 03	04 27	19 09
Dec. 2	04 51	18 48	04 47	18 52	04 42	18 57	04 37	19 02	04 31	19 08	04 25	19 14
7	04 51	18 52	04 47	18 56	04 42	19 01	04 36	19 07	04 31	19 12	04 25	19 19
12	04 52	18 55	04 47	19 00	04 42	19 05	04 37	19 11	04 31	19 17	04 25	19 23
17	04 54	18 58	04 49	19 03	04 44	19 09	04 38	19 14	04 32	19 20	04 26	19 26
22	04 56	19 01	04 51	19 06	04 46	19 11	04 40	19 17	04 34	19 23	04 28	19 29
27	04 59	19 03	04 54	19 08	04 49	19 13	04 43	19 19	04 37	19 25	04 31	19 31
Jan. 1	05 02	19 05	04 57	19 09	04 52	19 15	04 46	19 20	04 41	19 26	04 34	19 32

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date		42° S.		44° S.		46° S.		48° S.		50° S.		52° S.	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan.	1	04 28	19 39	04 21	19 46	04 13	19 54	04 04	20 02	03 55	20 12	03 44	20 22
	6	04 33	19 39	04 26	19 46	04 13	19 53	04 10	20 01	04 01	20 10	03 50	20 21
	11	04 38	19 37	04 31	19 44	04 24	19 51	04 16	19 59	04 07	20 08	03 57	20 18
	16	04 44	19 35	04 37	19 42	04 30	19 48	04 23	19 56	04 14	20 04	04 05	20 13
	21	04 50	19 32	04 44	19 38	04 37	19 45	04 30	19 52	04 22	19 59	04 14	20 08
	26	04 56	19 28	04 51	19 34	04 45	19 40	04 38	19 46	04 31	19 53	04 23	20 01
	31	05 03	19 24	04 58	19 29	04 52	19 34	04 46	19 40	04 39	19 46	04 32	19 54
Feb.	5	05 09	19 18	05 05	19 23	05 00	19 28	04 54	19 33	04 48	19 39	04 42	19 45
	10	05 16	19 12	05 12	19 16	05 07	19 20	05 02	19 25	04 57	19 30	04 51	19 36
	15	05 22	19 05	05 19	19 09	05 15	19 13	05 11	19 17	05 06	19 21	05 01	19 26
	20	05 29	18 58	05 26	19 01	05 22	19 04	05 19	19 08	05 15	19 12	05 10	19 16
	25	05 35	18 50	05 32	18 53	05 30	18 56	05 27	18 59	05 23	19 02	05 20	19 05
Mar.	2	05 41	18 42	05 39	18 44	05 37	18 47	05 34	18 49	05 32	18 52	05 29	18 54
	7	05 47	18 34	05 46	18 36	05 44	18 37	05 42	18 39	05 40	18 41	05 38	18 43
	12	05 53	18 26	05 52	18 27	05 51	18 28	05 50	18 29	05 48	18 30	05 47	18 32
	17	05 59	18 17	05 58	18 18	05 58	18 18	05 57	18 19	05 56	18 19	05 56	18 20
	22	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 09	06 04	18 08
	27	06 10	18 00	06 11	18 00	06 11	17 59	06 12	17 58	06 12	17 58	06 13	17 57
Apr.	1	06 16	17 52	06 17	17 51	06 18	17 49	06 19	17 48	06 20	17 47	06 21	17 45
	6	06 21	17 43	06 23	17 42	06 24	17 40	06 26	17 38	06 28	17 36	06 30	17 34
	11	06 27	17 35	06 29	17 33	06 31	17 31	06 33	17 28	06 36	17 26	06 38	17 23
	16	06 32	17 27	06 35	17 24	06 37	17 22	06 40	17 19	06 43	17 16	06 47	17 12
	21	06 37	17 19	06 40	17 16	06 44	17 13	06 47	17 10	06 51	17 06	06 55	17 02
	26	06 43	17 12	06 46	17 09	06 50	17 05	06 54	17 01	06 59	16 56	07 03	16 52
May	1	06 48	17 05	06 52	17 01	06 57	16 57	07 01	16 52	07 06	16 47	07 12	16 42
	6	06 54	16 59	06 58	16 55	07 03	16 50	07 08	16 45	07 14	16 39	07 20	16 33
	11	06 59	16 53	07 04	16 49	07 09	16 43	07 15	16 38	07 21	16 31	07 27	16 25
	16	07 04	16 48	07 09	16 43	07 15	16 37	07 21	16 31	07 28	16 24	07 35	16 17
	21	07 09	16 44	07 14	16 38	07 20	16 32	07 27	16 26	07 34	16 18	07 42	16 10
	26	07 13	16 40	07 19	16 34	07 26	16 28	07 33	16 21	07 40	16 13	07 49	16 05
	31	07 17	16 38	07 24	16 31	07 30	16 25	07 38	16 17	07 46	16 09	07 55	16 00
June	5	07 21	16 36	07 27	16 29	07 34	16 22	07 42	16 14	07 51	16 06	08 00	15 57
	10	07 24	16 35	07 31	16 28	07 38	16 21	07 46	16 13	07 54	16 04	08 04	15 54
	15	07 26	16 34	07 33	16 27	07 41	16 20	07 49	16 12	07 57	16 03	08 07	15 53
	20	07 28	16 35	07 35	16 28	07 42	16 21	07 50	16 12	07 59	16 04	08 09	15 54
	25	07 29	16 36	07 36	16 29	07 43	16 22	07 51	16 14	08 00	16 05	08 10	15 55
	30	07 29	16 38	07 36	16 31	07 43	16 24	07 51	16 16	08 00	16 07	08 10	15 58
July	5	07 28	16 41	07 35	16 34	07 42	16 27	07 50	16 19	07 58	16 11	08 08	16 01
	10	07 27	16 44	07 33	16 38	07 40	16 31	07 47	16 23	07 56	16 15	08 05	16 06
	15	07 24	16 48	07 30	16 42	07 37	16 35	07 44	16 28	07 52	16 20	08 01	16 11
	20	07 21	16 52	07 27	16 46	07 33	16 40	07 40	16 33	07 47	16 26	07 55	16 18
	25	07 17	16 57	07 22	16 51	07 28	16 45	07 34	16 39	07 41	16 32	07 49	16 24
	30	07 12	17 01	07 17	16 56	07 22	16 51	07 28	16 45	07 35	16 39	07 42	16 31
Aug.	4	07 06	17 06	07 11	17 02	07 16	16 57	07 22	16 51	07 27	16 45	07 34	16 39
	9	07 00	17 11	07 04	17 07	07 09	17 03	07 14	16 58	07 19	16 52	07 25	16 47
	14	06 54	17 16	06 57	17 13	07 01	17 09	07 06	17 04	07 11	17 00	07 16	16 54
	19	06 46	17 21	06 50	17 18	06 53	17 15	06 57	17 11	07 01	17 07	07 06	17 02
	24	06 39	17 27	06 42	17 24	06 45	17 21	06 48	17 18	06 52	17 14	06 55	17 10
	29	06 31	17 32	06 33	17 29	06 36	17 27	06 38	17 24	06 41	17 21	06 45	17 18
Sept.	3	06 23	17 37	06 25	17 35	06 27	17 33	06 29	17 31	06 31	17 29	06 33	17 26
	8	06 14	17 42	06 16	17 41	06 17	17 39	06 19	17 38	06 20	17 36	06 22	17 34
	13	06 06	17 47	06 06	17 46	06 07	17 45	06 08	17 44	06 09	17 43	06 11	17 42
	18	05 57	17 52	05 57	17 52	05 58	17 52	05 58	17 51	05 58	17 51	05 59	17 50
	23	05 48	17 57	05 48	17 58	05 48	17 58	05 48	17 58	05 47	17 58	05 47	17 59
	28	05 39	18 03	05 39	18 04	05 38	18 04	05 37	18 05	05 36	18 06	05 36	18 07
Oct.	3	05 31	18 08	05 30	18 09	05 28	18 11	05 27	18 12	05 26	18 14	05 24	18 15
	8	05 22	18 14	05 21	18 15	05 19	18 17	05 17	18 19	05 15	18 22	05 12	18 24
	13	05 14	18 19	05 12	18 22	05 09	18 24	05 07	18 27	05 04	18 30	05 01	18 33
	18	05 06	18 25	05 03	18 28	05 00	18 31	04 57	18 34	04 54	18 38	04 50	18 41
	23	04 58	18 31	04 55	18 35	04 52	18 38	04 48	18 42	04 44	18 46	04 39	18 51
	28	04 51	18 37	04 47	18 41	04 43	18 45	04 39	18 50	04 34	18 54	04 29	19 00
Nov.	2	04 44	18 44	04 40	18 48	04 36	18 52	04 31	18 57	04 25	19 03	04 19	19 09
	7	04 38	18 50	04 33	18 55	04 28	19 00	04 23	19 05	04 17	19 11	04 10	19 18
	12	04 33	18 56	04 28	19 01	04 22	19 07	04 16	19 13	04 09	19 20	04 02	19 27
	17	04 28	19 03	04 22	19 08	04 16	19 14	04 10	19 21	04 02	19 28	03 54	19 36
	22	04 24	19 09	04 18	19 15	04 12	19 21	04 04	19 29	03 57	19 36	03 48	19 45
	27	04 21	19 15	04 15	19 21	04 08	19 28	04 00	19 36	03 52	19 44	03 43	19 53
Dec.	2	04 19	19 20	04 12	19 27	04 05	19 34	03 57	19 42	03 48	19 51	03 38	20 01
	7	04 18	19 25	04 11	19 32	04 03	19 40	03 55	19 48	03 46	19 57	03 36	20 08
	12	04 18	19 29	04 11	19 37	04 03	19 44	03 54	19 53	03 45	20 03	03 34	20 13
	17	04 19	19 33	04 12	19 40	04 04	19 48	03 55	19 57	03 45	20 07	03 35	20 18
	22	04 21	19 36	04 14	19 43	04 06	19 51	03 57	20 00	03 47	20 10	03 36	20 21
	27	04 24	19 38	04 17	19 45	04 09	19 53	04 00	20 02	03 50	20 11	03 40	20 22
Jan.	1	04 28	19 39	04 21	19 46	04 13	19 54	04 04	20 02	03 55	20 12	03 44	20 22

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1990

Date	54° S.		56° S.		58° S.		60° S.	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan. 1	03 32	20 34	03 19	20 48	03 02	21 04	02 43	21 24
6	03 39	20 32	03 25	20 45	03 10	21 01	02 51	21 19
11	03 46	20 29	03 34	20 41	03 19	20 56	03 01	21 13
16	03 55	20 24	03 43	20 35	03 29	20 49	03 13	21 05
21	04 04	20 17	03 53	20 28	03 41	20 41	03 26	20 55
26	04 14	20 10	04 04	20 20	03 52	20 31	03 39	20 44
31	04 24	20 02	04 15	20 10	04 05	20 21	03 53	20 32
Feb. 5	04 34	19 52	04 26	20 00	04 17	20 09	04 07	20 20
10	04 45	19 42	04 38	19 49	04 30	19 57	04 20	20 06
15	04 55	19 32	04 49	19 38	04 42	19 45	04 34	19 52
20	05 06	19 21	05 00	19 26	04 54	19 32	04 48	19 38
25	05 16	19 09	05 11	19 13	05 07	19 18	05 01	19 24
Mar. 2	05 26	18 57	05 22	19 01	05 18	19 05	05 14	19 09
7	05 36	18 45	05 33	18 48	05 30	18 51	05 27	18 54
12	05 45	18 33	05 44	18 35	05 42	18 37	05 39	18 39
17	05 55	18 21	05 54	18 22	05 53	18 23	05 52	18 24
22	06 04	18 08	06 04	18 08	06 04	18 08	06 04	18 08
27	06 14	17 56	06 14	17 55	06 15	17 54	06 16	17 53
Apr. 1	06 23	17 44	06 25	17 42	06 26	17 40	06 28	17 38
6	06 32	17 32	06 35	17 29	06 37	17 26	06 40	17 23
11	06 41	17 20	06 45	17 17	06 48	17 13	06 52	17 09
16	06 50	17 08	06 55	17 04	06 59	16 59	07 04	16 54
21	07 00	16 57	07 05	16 52	07 10	16 46	07 16	16 40
26	07 09	16 46	07 14	16 40	07 21	16 34	07 28	16 26
May 1	07 18	16 36	07 24	16 29	07 32	16 22	07 40	16 13
6	07 26	16 26	07 34	16 19	07 42	16 10	07 52	16 00
11	07 35	16 17	07 43	16 09	07 53	15 59	08 04	15 48
16	07 43	16 09	07 52	16 00	08 03	15 49	08 15	15 37
21	07 51	16 02	08 01	15 52	08 12	15 40	08 25	15 27
26	07 58	15 55	08 09	15 45	08 21	15 32	08 35	15 18
31	08 05	15 50	08 16	15 39	08 29	15 26	08 44	15 10
June 5	08 10	15 46	08 22	15 34	08 36	15 21	08 52	15 04
10	08 15	15 44	08 27	15 31	08 41	15 17	08 58	15 00
15	08 18	15 42	08 31	15 30	08 45	15 15	09 03	14 58
20	08 20	15 43	08 33	15 30	08 48	15 15	09 05	14 57
25	08 21	15 44	08 34	15 31	08 49	15 17	09 06	14 59
30	08 21	15 47	08 33	15 34	08 47	15 20	09 05	15 03
July 5	08 18	15 51	08 31	15 39	08 45	15 25	09 01	15 08
10	08 15	15 56	08 27	15 44	08 40	15 31	08 56	15 15
15	08 10	16 02	08 21	15 51	08 34	15 38	08 49	15 23
20	08 05	16 08	08 15	15 58	08 27	15 46	08 40	15 33
25	07 58	16 16	08 07	16 06	08 18	15 55	08 31	15 43
30	07 50	16 24	07 59	16 15	08 09	16 05	08 20	15 54
Aug. 4	07 41	16 32	07 49	16 24	07 58	16 15	08 08	16 05
9	07 32	16 40	07 39	16 33	07 47	16 25	07 56	16 16
14	07 21	16 49	07 28	16 42	07 35	16 35	07 43	16 27
19	07 11	16 57	07 16	16 52	07 22	16 46	07 29	16 39
24	07 00	17 06	07 04	17 01	07 09	16 56	07 15	16 51
29	06 48	17 15	06 52	17 11	06 56	17 07	07 01	17 02
Sept. 3	06 36	17 24	06 39	17 21	06 43	17 17	06 46	17 14
8	06 24	17 32	06 26	17 30	06 29	17 28	06 31	17 25
13	06 12	17 41	06 13	17 40	06 15	17 38	06 16	17 37
18	05 59	17 50	06 00	17 50	06 01	17 49	06 01	17 49
23	05 47	17 59	05 47	17 59	05 46	18 00	05 46	18 00
28	05 35	18 08	05 33	18 09	05 32	18 11	05 31	18 12
Oct. 3	05 22	18 17	05 20	18 19	05 18	18 22	05 16	18 24
8	05 10	18 27	05 07	18 29	05 04	18 33	05 01	18 36
13	04 58	18 36	04 54	18 40	04 50	18 44	04 46	18 49
18	04 46	18 46	04 41	18 50	04 36	18 56	04 31	19 01
23	04 35	18 56	04 29	19 01	04 23	19 07	04 16	19 14
28	04 23	19 05	04 17	19 12	04 10	19 19	04 02	19 27
Nov. 2	04 13	19 16	04 06	19 23	03 57	19 31	03 48	19 41
7	04 03	19 26	03 55	19 34	03 46	19 43	03 35	19 54
12	03 54	19 36	03 45	19 45	03 34	19 56	03 22	20 08
17	03 46	19 46	03 35	19 56	03 24	20 07	03 11	20 21
22	03 38	19 55	03 27	20 06	03 15	20 19	03 00	20 34
27	03 32	20 04	03 20	20 16	03 07	20 30	02 50	20 46
Dec. 2	03 27	20 12	03 15	20 25	03 00	20 40	02 42	20 58
7	03 24	20 19	03 11	20 33	02 55	20 48	02 36	21 07
12	03 22	20 25	03 08	20 39	02 52	20 56	02 33	21 15
17	03 22	20 30	03 08	20 44	02 51	21 01	02 31	21 21
22	03 24	20 33	03 10	20 47	02 53	21 04	02 32	21 25
27	03 27	20 34	03 13	20 49	02 56	21 05	02 36	21 26
Jan. 1	03 32	20 34	03 18	20 48	03 02	21 04	02 42	21 24

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 5.—REDUCTION OF LOCAL MEAN TIME TO STANDARD TIME

Difference of longitude between local and standard meridian	Correction to local mean time to obtain standard time	Difference of longitude between local and standard meridian	Correction to local mean time to obtain standard time	Difference of longitude between local and standard meridian	Correction to local mean time to obtain standard time
° ′ ° ′	Minutes	° ′ ° ′	Minutes	°	Hours
0 00 to 0 07	0	7 23 to 7 37	30	15	1
0 08 to 0 22	1	7 38 to 7 52	31	30	2
0 23 to 0 37	2	7 53 to 8 07	32	45	3
0 38 to 0 52	3	8 08 to 8 22	33	60	4
0 53 to 1 07	4	8 23 to 8 37	34	75	5
1 08 to 1 22	5	8 38 to 8 52	35	90	6
1 23 to 1 37	6	8 53 to 9 07	36	105	7
1 38 to 1 52	7	9 08 to 9 22	37	120	8
1 53 to 2 07	8	9 23 to 9 37	38	135	9
2 08 to 2 22	9	9 38 to 9 52	39	150	10
2 23 to 2 37	10	9 53 to 10 07	40	165	11
2 38 to 2 52	11	10 08 to 10 22	41	180	12
2 53 to 3 07	12	10 23 to 10 37	42		
3 08 to 3 22	13	10 38 to 10 52	43		
3 23 to 3 37	14	10 53 to 11 07	44		
3 38 to 3 52	15	11 08 to 11 22	45		
3 53 to 4 07	16	11 23 to 11 37	46		
4 08 to 4 22	17	11 38 to 11 52	47		
4 23 to 4 37	18	11 53 to 12 07	48		
4 38 to 4 52	19	12 08 to 12 22	49		
4 53 to 5 07	20	12 23 to 12 37	50		
5 08 to 5 22	21	12 38 to 12 52	51		
5 23 to 5 37	22	12 53 to 13 07	52		
5 38 to 5 52	23	13 08 to 13 22	53		
5 53 to 6 07	24	13 23 to 13 37	54		
6 08 to 6 22	25	13 38 to 13 52	55		
6 23 to 6 37	26	13 53 to 14 07	56		
6 38 to 6 52	27	14 08 to 14 22	57		
6 53 to 7 07	28	14 23 to 14 37	58		
7 08 to 7 22	29	14 38 to 14 52	59		

If local meridian is east of standard meridian, subtract the correction from local time.

If local meridian is west of standard meridian, add the correction to local time.

For differences of longitude less than 15°, use the first part of the table. For greater differences use both parts thus: 47°23′ is equivalent to 45° + 2°23′, the correction for 45° is 3 hours, the correction for 2°23′ is 10 minutes; therefore the total correction for the difference in longitude 47°23′ is 3 hours and 10 minutes.

TABLE 6.—MOONRISE AND MOONSET

EXPLANATION OF TABLE

This table gives the time of rising and setting of the Moon's upper limb for every day in the year, at each of the following places:

Panama Canal	San Francisco, California	Anchorage, Alaska
Los Angeles, California	Seattle, Washington	Honolulu, Hawaii

All of table 6 was supplied by the Nautical Almanac Office of the United States Naval Observatory. For the Panama Canal the times were computed for a point about midway between the two ends and are applicable to the entire Canal without the error exceeding a minute or two.

TABLE 6-MOONRISE AND MOONSET, 1990

PANAMA CANAL

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1006	2219	1100	2348	0946	2241	1131	....	1218	0018	1325	0103	1
2	1048	2310	1149	....	1039	2342	1232	0038	1309	0104	1410	0140	2
3	1130	....	1243	0047	1137	....	1329	0132	1357	0146	1455	0217	3
4	1215	0002	1342	0148	1237	0045	1422	0221	1443	0225	1542	0256	4
5	1302	0056	1442	0251	1337	0145	1512	0306	1528	0303	1630	0337	5
6	1354	0153	1544	0351	1436	0243	1559	0346	1612	0340	1719	0421	6
7	1450	0254	1644	0448	1533	0335	1645	0425	1658	0418	1811	0507	7
8	1551	0358	1740	0540	1625	0423	1729	0502	1744	0457	1902	0557	8
9	1655	0502	1832	0627	1715	0506	1814	0539	1833	0539	1953	0649	9
10	1757	0603	1922	0710	1802	0547	1900	0618	1924	0623	2042	0741	10
11	1857	0659	2008	0750	1848	0625	1948	0658	2015	0711	2129	0834	11
12	1952	0750	2054	0828	1933	0703	2037	0740	2106	0801	2213	0925	12
13	2043	0835	2139	0906	2018	0740	2128	0826	2156	0853	2255	1015	13
14	2131	0917	2224	0944	2105	0819	2219	0914	2245	0945	2336	1104	14
15	2217	0955	2311	1023	2153	0900	2311	1005	2330	1037	....	1154	15
16	2301	1033	....	1105	2243	0944	....	1057	....	1128	0018	1244	16
17	2346	1110	0000	1149	2334	1030	0001	1150	0014	1219	0101	1337	17
18	....	1148	0051	1238	....	1120	0049	1243	0057	1309	0147	1434	18
19	0032	1228	0144	1329	0026	1212	0135	1335	0139	1400	0238	1535	19
20	0119	1311	0237	1423	0118	1306	0219	1427	0222	1453	0334	1639	20
21	0209	1357	0329	1519	0208	1400	0303	1519	0308	1549	0436	1746	21
22	0302	1448	0420	1614	0257	1454	0347	1613	0358	1650	0541	1851	22
23	0355	1541	0508	1709	0344	1548	0433	1709	0453	1754	0647	1952	23
24	0449	1637	0555	1803	0429	1641	0521	1808	0553	1902	0750	2046	24
25	0541	1733	0640	1856	0514	1735	0614	1912	0658	2008	0849	2135	25
26	0631	1828	0724	1950	0559	1830	0712	2018	0804	2111	0943	2219	26
27	0718	1922	0809	2044	0646	1927	0814	2124	0908	2208	1033	2259	27
28	0803	2014	0856	2141	0736	2028	0918	2227	1007	2258	1120	2338	28
29	0846	2106	....	....	0830	2131	1022	2325	1102	2343	1206	....	29
30	0929	2158	....	....	0928	2235	1122	....	1153	....	1251	0016	30
31	1013	2252	....	....	1029	2338	....	....	1240	0024	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1337	0054	1449	0145	1600	0304	1604	0327	1653	0442	1724	0526	1
2	1425	0135	1541	0235	1645	0356	1647	0418	1746	0541	1830	0633	2
3	1514	0217	1632	0328	1729	0448	1731	0510	1844	0644	1937	0740	3
4	1605	0303	1721	0421	1812	0539	1817	0603	1947	0750	2042	0843	4
5	1657	0352	1808	0514	1855	0630	1907	0700	2052	0856	2143	0940	5
6	1748	0443	1852	0606	1939	0722	2001	0800	2156	1000	2239	1031	6
7	1839	0536	1935	0657	2026	0816	2100	0903	2257	1058	2331	1117	7
8	1926	0629	2017	0747	2116	0912	2202	1007	2354	1151	....	1159	8
9	2012	0721	2059	0838	2210	1011	2305	1110	....	1238	0019	1239	9
10	2055	0812	2142	0929	2308	1113	....	1210	0046	1321	0106	1318	10
11	2136	0902	2229	1022	....	1216	0006	1305	0135	1401	0153	1358	11
12	2217	0951	2319	1118	0009	1317	0104	1354	0222	1440	0239	1438	12
13	2259	1041	....	1217	0111	1414	0158	1439	0309	1518	0327	1521	13
14	2343	1132	0014	1319	0211	1508	0249	1521	0355	1558	0416	1606	14
15	....	1226	0113	1422	0308	1556	0337	1601	0442	1639	0507	1654	15
16	0031	1323	0215	1523	0402	1641	0424	1640	0530	1723	0557	1744	16
17	0123	1425	0318	1621	0453	1722	0511	1719	0620	1809	0648	1835	17
18	0221	1529	0419	1713	0541	1802	0558	1759	0711	1858	0737	1926	18
19	0323	1633	0516	1801	0629	1842	0646	1842	0802	1948	0823	2016	19
20	0428	1735	0610	1845	0716	1921	0735	1926	0851	2039	0907	2105	20
21	0532	1832	0701	1927	0803	2002	0825	2013	0939	2130	0949	2153	21
22	0633	1923	0749	2006	0852	2046	0916	2103	1025	2220	1029	2240	22
23	0729	2010	0836	2046	0941	2131	1007	2153	1108	2308	1109	2327	23
24	0822	2053	0923	2126	1032	2219	1056	2244	1150	2356	1149	....	24
25	0911	2133	1011	2207	1123	2309	1144	2335	1230	....	1231	0016	25
26	0958	2212	1059	2251	1214	....	1229	....	1311	0044	1316	0108	26
27	1045	2251	1149	2338	1303	0001	1313	0025	1354	0134	1407	0204	27
28	1131	2331	1240	....	1351	0053	1355	0115	1439	0226	1503	0304	28
29	1219	....	1332	0027	1437	0144	1437	0205	1528	0321	1605	0408	29
30	1307	0013	1423	0118	1521	0236	1520	0255	1623	0421	1711	0515	30
31	1358	0057	1512	0211	....	....	1605	0347	....	....	1818	0620	31

Time meridian 75° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1990

LOS ANGELES, CA

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1000	2149	1005	....	0843	2311	1009	0023	1119	0040	1311	0040	1
2	1029	2254	1043	0010	0925	....	1115	0117	1222	0115	1407	0106	2
3	1058	....	1127	0121	1015	0022	1222	0203	1322	0154	1504	0132	3
4	1129	0000	1219	0231	1113	0129	1326	0240	1420	0211	1601	0200	4
5	1203	0108	1319	0336	1216	0229	1428	0313	1517	0237	1659	0231	5
6	1244	0219	1425	0434	1322	0320	1527	0341	1613	0302	1756	0307	6
7	1331	0331	1533	0523	1429	0403	1625	0407	1710	0326	1852	0348	7
8	1428	0442	1640	0604	1533	0439	1722	0433	1807	0358	1944	0434	8
9	1532	0547	1745	0639	1635	0510	1819	0459	1905	0430	2032	0527	9
10	1641	0643	1846	0709	1734	0538	1916	0526	2002	0507	2114	0624	10
11	1751	0729	1946	0736	1832	0604	2014	0555	2057	0549	2151	0724	11
12	1858	0808	2043	0802	1930	0629	2112	0629	2148	0638	2224	0825	12
13	2001	0841	2141	0827	2027	0655	2208	0707	2234	0731	2255	0926	13
14	2102	0910	2238	0854	2125	0723	2302	0751	2314	0829	2323	1028	14
15	2200	0936	2336	0923	2223	0754	2352	0841	2350	0930	2352	1131	15
16	2256	1001	....	0955	2321	0829	....	0937	....	1031	....	1235	16
17	2353	1027	0034	1032	....	0909	0036	1036	0023	1134	0022	1342	17
18	....	1054	0132	1115	0017	0956	0116	1139	0053	1237	0056	1453	18
19	0050	1123	0228	1205	0110	1049	0151	1242	0122	1342	0134	1606	19
20	0148	1157	0320	1301	0158	1147	0224	1347	0152	1449	0220	1720	20
21	0246	1237	0407	1403	0242	1249	0254	1453	0224	1600	0315	1830	21
22	0344	1324	0449	1508	0321	1354	0325	1601	0301	1715	0420	1937	22
23	0439	1417	0527	1615	0355	1500	0356	1713	0344	1831	0530	2024	23
24	0530	1517	0600	1722	0427	1608	0431	1827	0435	1945	0643	2107	24
25	0615	1621	0631	1830	0458	1716	0511	1943	0536	2052	0753	2142	25
26	0655	1727	0702	1938	0529	1826	0558	2059	0644	2148	0859	2213	26
27	0730	1834	0732	2048	0602	1939	0653	2208	0755	2235	1002	2241	27
28	0802	1940	0806	2159	0639	2053	0756	2309	0905	2313	1101	2308	28
29	0832	2046	....	....	0721	2208	0904	2359	1011	2345	1159	2334	29
30	0901	2152	....	....	0810	2319	1012	....	1114	....	1256	....	30
31	0932	2300	....	....	0906	....	....	....	1213	0014	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1354	0002	1531	0024	1624	0153	1557	0244	1601	0449	1607	0602	1
2	1451	0032	1623	0112	1658	0255	1627	0349	1642	0601	1710	0715	2
3	1549	0106	1709	0207	1730	0359	1658	0455	1730	0717	1820	0821	3
4	1646	0145	1750	0305	1800	0503	1731	0603	1827	0831	1933	0917	4
5	1739	0230	1827	0407	1829	0607	1808	0714	1932	0939	2045	1003	5
6	1829	0320	1900	0510	1900	0713	1852	0827	2042	1038	2153	1042	6
7	1913	0417	1930	0613	1934	0821	1942	0940	2152	1128	2257	1115	7
8	1952	0516	1959	0716	2012	0931	2041	1049	2300	1209	2358	1144	8
9	2027	0618	2028	0820	2056	1042	2145	1152	....	1244	....	1212	9
10	2058	0720	2059	0925	2148	1153	2253	1246	0004	1314	0057	1239	10
11	2127	0822	2132	1032	2247	1259	....	1331	0105	1342	0155	1308	11
12	2155	0924	2211	1141	2352	1358	0001	1409	0205	1409	0253	1338	12
13	2224	1027	2257	1251	....	1449	0107	1442	0303	1436	0351	1412	13
14	2256	1132	2352	1401	0101	1531	0210	1511	0400	1505	0448	1451	14
15	2331	1240	....	1506	0208	1608	0311	1539	0459	1537	0545	1534	15
16	....	1350	0054	1603	0314	1640	0410	1606	0557	1612	0638	1623	16
17	0013	1502	0202	1652	0418	1709	0509	1633	0654	1652	0727	1716	17
18	0102	1612	0312	1733	0519	1736	0607	1703	0750	1737	0811	1813	18
19	0201	1716	0421	1808	0619	1803	0706	1736	0842	1827	0850	1911	19
20	0308	1812	0527	1839	0718	1832	0804	1812	0929	1922	0924	2010	20
21	0419	1858	0631	1908	0817	1902	0902	1854	1012	2019	0955	2109	21
22	0531	1937	0732	1935	0916	1936	0956	1941	1049	2117	1024	2208	22
23	0640	2011	0832	2002	1014	2014	1047	2032	1122	2216	1052	2308	23
24	0745	2040	0931	2031	1111	2058	1133	2128	1153	2316	1120	....	24
25	0847	2108	1029	2103	1205	2147	1214	2227	1222	....	1150	0010	25
26	0947	2135	1128	2138	1254	2241	1250	2326	1250	0017	1223	0115	26
27	1045	2202	1226	2218	1339	2339	1323	....	1320	0119	1302	0224	27
28	1143	2232	1321	2304	1419	....	1354	0027	1353	0225	1349	0335	28
29	1241	2304	1414	2356	1454	0039	1424	0129	1430	0334	1446	0448	29
30	1339	2341	1502	....	1527	0141	1453	0233	1514	0447	1552	0557	30
31	1437	....	1545	0052	....	....	1525	0339	....	....	1705	0659	31

Time meridian 120° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1990

SAN FRANCISCO, CA

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1021	2205	1015	....	0851	2340	1013	0054	1128	0107	1330	0057	1
2	1047	2312	1050	0037	0931	....	1120	0148	1234	0138	1429	0120	2
3	1113	....	1132	0150	1019	0053	1229	0231	1337	0206	1528	0144	3
4	1141	0021	1222	0302	1116	0201	1336	0306	1437	0230	1628	0210	4
5	1212	0133	1322	0408	1220	0301	1441	0336	1536	0253	1727	0239	5
6	1250	0247	1429	0505	1328	0350	1543	0402	1635	0316	1827	0312	6
7	1336	0401	1539	0552	1437	0430	1643	0425	1734	0340	1923	0352	7
8	1431	0514	1649	0631	1544	0504	1742	0448	1834	0407	2016	0438	8
9	1536	0618	1756	0703	1648	0532	1842	0512	1934	0437	2102	0530	9
10	1646	0713	1901	0730	1750	0558	1941	0536	2033	0512	2143	0628	10
11	1758	0758	2003	0755	1851	0621	2042	0604	2128	0553	2218	0730	11
12	1908	0834	2103	0818	1951	0644	2142	0635	2219	0641	2249	0834	12
13	2014	0904	2203	0841	2051	0708	2240	0712	2304	0735	2316	0938	13
14	2117	0930	2303	0905	2151	0732	2334	0755	2343	0834	2342	1042	14
15	2218	0953	....	0931	2251	0802	....	0845	....	0937	....	1148	15
16	2317	1016	0003	1001	2351	0834	0023	0941	0016	1041	0008	1255	16
17	....	1039	0103	1036	....	0913	0106	1042	0046	1146	0036	1405	17
18	0016	1104	0203	1118	0048	0959	0144	1146	0114	1252	0106	1519	18
19	0116	1131	0259	1208	0142	1052	0217	1253	0140	1400	0142	1635	19
20	0216	1203	0351	1305	0229	1151	0246	1400	0207	1510	0226	1751	20
21	0317	1241	0437	1408	0311	1256	0314	1509	0237	1625	0319	1902	21
22	0416	1327	0517	1516	0347	1403	0341	1621	0310	1742	0423	2003	22
23	0511	1420	0552	1625	0420	1512	0410	1735	0351	1901	0535	2053	23
24	0601	1521	0623	1736	0449	1622	0442	1853	0440	2017	0650	2133	24
25	0645	1627	0651	1846	0517	1734	0519	2012	0539	2123	0803	2206	25
26	0722	1736	0718	1958	0545	1848	0603	2130	0648	2218	0912	2234	26
27	0755	1845	0746	2111	0615	2004	0657	2240	0800	2302	1017	2259	27
28	0823	1954	0816	2225	0648	2121	0759	2340	0913	2338	1119	2323	28
29	0850	2103	....	....	0727	2238	0908	....	1022	....	1220	2347	29
30	0917	2213	....	....	0814	2351	1017	0028	1128	0007	1320	....	30
31	0944	2324	....	....	0909	....	....	....	1230	0033	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1419	0012	1603	0027	1651	0159	1618	0257	1611	0512	1612	0632	1
2	1519	0040	1654	0116	1723	0304	1645	0404	1649	0628	1714	0746	2
3	1619	0112	1739	0210	1751	0410	1713	0513	1736	0746	1825	0852	3
4	1717	0149	1819	0311	1819	0517	1743	0625	1831	0901	1940	0956	4
5	1811	0233	1853	0414	1846	0625	1817	0738	1936	1010	2054	1030	5
6	1900	0324	1923	0520	1913	0734	1858	0854	2047	1108	2205	1106	6
7	1943	0421	1950	0626	1944	0844	1947	1010	2200	1156	2312	1136	7
8	2020	0522	2017	0732	2019	0957	2044	1121	2310	1235	....	1203	8
9	2052	0626	2043	0838	2101	1111	2150	1223	....	1307	0015	1228	9
10	2120	0731	2111	0946	2152	1223	2259	1316	0017	1334	0117	1253	10
11	2147	0836	2142	1056	2251	1330	....	1359	0121	1400	0218	1319	11
12	2212	0941	2218	1208	2357	1429	0009	1434	0223	1424	0318	1347	12
13	2239	1047	2302	1321	....	1518	0118	1504	0323	1449	0418	1419	13
14	2307	1154	2355	1432	0107	1558	0223	1531	0424	1516	0518	1456	14
15	2340	1305	....	1537	0217	1632	0327	1556	0524	1545	0615	1538	15
16	....	1418	0057	1633	0326	1701	0429	1620	0625	1618	0709	1627	16
17	0019	1532	0207	1720	0432	1727	0530	1645	0724	1656	0758	1721	17
18	0107	1644	0319	1759	0536	1752	0631	1713	0821	1741	0840	1819	18
19	0205	1748	0431	1831	0639	1817	0732	1743	0913	1831	0917	1919	19
20	0312	1842	0540	1900	0741	1843	0833	1818	1000	1926	0950	2020	20
21	0425	1926	0646	1925	0842	1911	0932	1858	1041	2025	1018	2122	21
22	0539	2002	0750	1950	0943	1943	1027	1944	1116	2126	1044	2223	22
23	0651	2033	0853	2015	1044	2019	1118	2036	1147	2227	1110	2326	23
24	0759	2059	0954	2041	1142	2101	1203	2133	1215	2329	1135	....	24
25	0904	2124	1055	2111	1236	2150	1243	2233	1242	....	1203	0031	25
26	1006	2149	1156	2144	1325	2245	1317	2336	1308	0033	1234	0138	26
27	1107	2214	1256	2222	1408	2344	1347	....	1335	0138	1310	0250	27
28	1208	2241	1353	2307	1446	....	1415	0039	1405	0247	1355	0404	28
29	1309	2311	1445	2359	1520	0047	1442	0144	1439	0359	1450	0519	29
30	1409	2346	1533	....	1550	0151	1510	0250	1521	0515	1556	0628	30
31	1507	....	1614	0057	....	....	1539	0359	....	....	1710	0729	31

Time meridian 120° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1990

SEATTLE, WA

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1030	2158	0952	....	0822	....	0928	0138	1102	0134	1334	0056	1
2	1048	2315	1019	0104	0854	0013	1041	0227	1216	0158	1440	0112	2
3	1105	....	1053	0226	0936	0134	1157	0304	1327	0217	1547	0129	3
4	1125	0033	1138	0344	1030	0246	1312	0331	1435	0234	1654	0147	4
5	1148	0154	1236	0453	1136	0344	1425	0353	1542	0250	1801	0209	5
6	1216	0317	1346	0547	1250	0428	1535	0411	1649	0306	1906	0236	6
7	1255	0440	1504	0628	1407	0501	1643	0428	1756	0323	2006	0310	7
8	1346	0557	1622	0659	1522	0527	1751	0443	1903	0342	2059	0353	8
9	1451	0703	1738	0723	1635	0547	1858	0459	2010	0405	2143	0446	9
10	1607	0753	1851	0742	1746	0605	2005	0516	2114	0434	2218	0548	10
11	1727	0830	2001	0759	1854	0621	2113	0537	2212	0510	2246	0656	11
12	1845	0858	2110	0814	2002	0636	2219	0601	2302	0556	2309	0807	12
13	2000	0920	2218	0830	2110	0652	2322	0632	2343	0652	2329	0919	13
14	2111	0938	2325	0847	2218	0710	....	0711	....	0755	2347	1032	14
15	2220	0954	....	0905	2325	0732	0018	0800	0016	0904	....	1146	15
16	2327	1009	0033	0928	....	0758	0105	0858	0042	1016	0005	1302	16
17	....	1025	0140	0957	0031	0831	0144	1005	0104	1130	0024	1421	17
18	0034	1042	0245	1034	0132	0914	0215	1116	0124	1244	0046	1544	18
19	0141	1102	0344	1121	0226	1007	0240	1231	0142	1401	0113	1709	19
20	0249	1127	0435	1220	0311	1110	0302	1347	0201	1521	0149	1832	20
21	0356	1159	0517	1329	0347	1220	0321	1505	0222	1644	0236	1945	21
22	0500	1241	0550	1444	0416	1336	0340	1626	0246	1812	0339	2043	22
23	0556	1334	0617	1602	0440	1454	0400	1750	0318	1939	0455	2127	23
24	0644	1439	0639	1722	0500	1613	0423	1918	0359	2059	0617	2159	24
25	0721	1551	0658	1842	0520	1734	0450	2046	0455	2206	0738	2223	25
26	0751	1708	0717	2003	0539	1858	0526	2211	0604	2256	0856	2243	26
27	0815	1826	0736	2125	0600	2023	0613	2324	0723	2332	1010	2301	27
28	0836	1945	0757	2249	0624	2151	0715	....	0844	....	1120	2317	28
29	0854	2103	....	....	0654	2316	0827	0021	1002	0000	1229	2334	29
30	0912	2222	....	....	0733	....	0945	0103	1115	0021	1336	2352	30
31	0931	2342	....	....	0824	0034	....	....	1226	0040	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1443	....	1646	....	1719	0124	1626	0242	1550	0528	1532	0710	1
2	1551	0013	1737	0031	1744	0236	1645	0358	1620	0654	1631	0828	2
3	1656	0038	1818	0127	1805	0351	1705	0516	1658	0820	1744	0932	3
4	1759	0109	1852	0232	1824	0506	1726	0636	1749	0942	1905	1021	4
5	1854	0149	1918	0342	1842	0623	1752	0800	1854	1052	2028	1057	5
6	1941	0239	1941	0456	1902	0740	1824	0925	2009	1147	2148	1125	6
7	2019	0339	2000	0610	1924	0900	1906	1048	2128	1228	2303	1147	7
8	2050	0446	2018	0725	1951	1022	2001	1203	2247	1259	....	1206	8
9	2114	0557	2036	0840	2025	1145	2107	1305	....	1323	0015	1224	9
10	2135	0710	2056	0957	2109	1304	2223	1353	0002	1343	0124	1241	10
11	2154	0823	2119	1115	2206	1413	2340	1429	0115	1401	0232	1300	11
12	2211	0936	2147	1236	2316	1510	....	1456	0224	1418	0340	1321	12
13	2230	1051	2223	1357	....	1553	0057	1518	0333	1436	0447	1347	13
14	2250	1207	2311	1514	0032	1626	0211	1537	0441	1455	0553	1418	14
15	2314	1327	....	1620	0151	1652	0323	1555	0549	1517	0655	1456	15
16	2345	1449	0013	1713	0308	1713	0433	1612	0656	1544	0751	1544	16
17	....	1611	0127	1754	0422	1731	0542	1630	0801	1617	0838	1640	17
18	0026	1727	0247	1824	0535	1749	0650	1650	0902	1658	0917	1742	18
19	0120	1830	0407	1848	0645	1806	0759	1713	0955	1748	0948	1849	19
20	0229	1919	0525	1908	0755	1824	0906	1742	1040	1846	1014	1957	20
21	0348	1956	0640	1926	0904	1845	1011	1817	1116	1950	1035	2106	21
22	0510	2024	0752	1943	1013	1910	1109	1901	1145	2057	1054	2216	22
23	0631	2046	0903	2001	1120	1941	1200	1954	1210	2206	1112	2326	23
24	0748	2105	1012	2020	1223	2019	1242	2054	1230	2316	1130	....	24
25	0901	2122	1121	2042	1319	2106	1316	2200	1249	....	1150	0039	25
26	1012	2138	1229	2108	1407	2202	1344	2309	1308	0028	1212	0156	26
27	1121	2156	1334	2141	1446	2307	1407	....	1327	0141	1241	0316	27
28	1229	2216	1435	2223	1518	....	1428	0021	1348	0258	1318	0438	28
29	1337	2239	1529	2315	1544	0016	1447	0134	1414	0420	1408	0559	29
30	1444	2308	1614	....	1606	0128	1506	0249	1447	0545	1513	0710	30
31	1548	2345	1650	0016	....	....	1526	0407	....	....	1632	0807	31

Time meridian 120° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1990

ANCHORAGE, AK

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1142	2241	0952	0125	0805	0050	0805	0452	1056	0333	1441	0145	1
2	1141	....	0953	0314	0809	0244	0947	0514	1233	0335	1606	0145	2
3	1140	0019	0958	0508	0820	0438	1132	0521	1403	0335	1732	0144	3
4	1140	0159	1013	0657	0856	0609	1313	0524	1530	0335	1900	0145	4
5	1140	0344	1102	0817	1018	0653	1447	0525	1654	0334	2031	0147	5
6	1142	0536	1238	0848	1203	0707	1616	0524	1820	0334	2201	0151	6
7	1150	0732	1427	0857	1349	0712	1743	0523	1947	0333	2320	0202	7
8	1215	0918	1614	0900	1529	0713	1908	0522	2116	0334	....	0228	8
9	1325	1020	1754	0901	1703	0713	2035	0522	2248	0336	0011	0324	9
10	1512	1040	1927	0900	1833	0712	2203	0521	....	0341	0034	0448	10
11	1704	1047	2057	0859	2000	0711	2334	0522	0016	0355	0043	0622	11
12	1848	1048	2223	0858	2127	0710	....	0524	0128	0428	0047	0758	12
13	2025	1049	2350	0856	2254	0708	0107	0530	0210	0533	0049	0933	13
14	2156	1048	....	0855	....	0708	0233	0547	0227	0702	0049	1106	14
15	2323	1047	0119	0854	0025	0708	0338	0628	0235	0837	0049	1240	15
16	....	1045	0250	0855	0157	0711	0410	0744	0237	1014	0049	1416	16
17	0049	1044	0424	0858	0330	0718	0422	0918	0239	1149	0050	1558	17
18	0215	1043	0557	0909	0454	0740	0427	1057	0239	1325	0051	1747	18
19	0344	1043	0713	0941	0547	0835	0428	1236	0239	1502	0054	1942	19
20	0517	1044	0751	1055	0608	1003	0429	1415	0239	1644	0102	2135	20
21	0652	1049	0803	1234	0616	1144	0429	1554	0240	1832	0122	2258	21
22	0822	1107	0807	1420	0618	1327	0429	1737	0242	2028	0217	2335	22
23	0923	1158	0808	1605	0619	1509	0429	1925	0247	2228	0356	2348	23
24	0946	1327	0807	1749	0618	1651	0430	2120	0258	....	0549	2353	24
25	0953	1512	0806	1931	0618	1835	0432	2320	0332	0012	0738	2355	25
26	0955	1657	0805	2114	0617	2021	0439	....	0451	0111	0919	2356	26
27	0955	1841	0805	2300	0617	2212	0458	0115	0639	0133	1052	2356	27
28	0955	2021	0804	....	0618	....	0550	0240	0829	0141	1221	2355	28
29	0954	2201	....	....	0621	0008	0724	0316	1011	0144	1348	2355	29
30	0952	2341	....	....	0630	0206	0912	0328	1146	0145	1514	2355	30
31	0952	....	....	....	0657	0351	....	....	1315	0145	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1642	2357	2003	2302	1923	0047	1738	0306	1554	0707	1433	0957	1
2	1813	....	2045	....	1925	0225	1738	0443	1559	0859	1517	1132	2
3	1944	0000	2102	0009	1926	0403	1739	0621	1611	1055	1644	1225	3
4	2108	0008	2109	0139	1926	0540	1741	0804	1638	1242	1833	1247	4
5	2210	0027	2112	0316	1926	0717	1744	0952	1742	1356	2023	1257	5
6	2241	0113	2113	0455	1927	0856	1750	1144	1919	1429	2205	1301	6
7	2253	0230	2114	0631	1928	1038	1805	1337	2107	1443	2341	1304	7
8	2258	0403	2113	0807	1932	1226	1842	1511	2250	1449	....	1305	8
9	2300	0541	2113	0942	1939	1417	1959	1605	....	1452	0112	1306	9
10	2301	0717	2114	1120	1957	1604	2141	1627	0027	1454	0239	1307	10
11	2301	0851	2115	1301	2045	1725	2326	1636	0158	1455	0406	1308	11
12	2301	1025	2119	1449	2212	1805	....	1641	0326	1456	0534	1311	12
13	2301	1159	2128	1639	2357	1821	0106	1643	0453	1456	0702	1316	13
14	2302	1337	2152	1822	....	1828	0241	1644	0620	1458	0831	1326	14
15	2304	1520	2253	1932	0143	1830	0412	1644	0748	1501	0953	1346	15
16	2309	1710	....	2002	0323	1832	0540	1644	0918	1507	1056	1427	16
17	2321	1903	0031	2013	0458	1832	0707	1645	1046	1519	1133	1534	17
18	2357	2040	0221	2017	0630	1832	0836	1647	1204	1544	1151	1659	18
19	....	2135	0408	2019	0759	1832	1006	1650	1259	1633	1200	1829	19
20	0117	2155	0549	2019	0928	1833	1137	1657	1329	1746	1204	1959	20
21	0305	2203	0724	2019	1058	1834	1304	1711	1344	1913	1207	2128	21
22	0457	2206	0856	2019	1230	1838	1417	1742	1351	2043	1208	2256	22
23	0643	2207	1025	2019	1401	1845	1504	1839	1355	2214	1209	....	23
24	0822	2207	1154	2020	1525	1903	1527	2000	1357	2344	1210	0025	24
25	0954	2207	1325	2021	1631	1942	1538	2130	1358	....	1212	0158	25
26	1124	2207	1456	2026	1708	2051	1543	2303	1359	0114	1215	0336	26
27	1252	2207	1627	2035	1724	2219	1546	....	1400	0247	1220	0521	27
28	1420	2208	1747	2059	1732	2354	1547	0035	1402	0426	1232	0711	28
29	1551	2210	1842	2151	1735	....	1548	0209	1407	0611	1259	0857	29
30	1722	2215	1908	2312	1737	0130	1549	0344	1415	0803	1402	1013	30
31	1851	2229	1919	....	....	....	1551	0523	....	....	1544	1049	31

Time meridian 135° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1990

HONOLULU, HI

Day	JANUARY Rise	JANUARY Set	FEBRUARY Rise	FEBRUARY Set	MARCH Rise	MARCH Set	APRIL Rise	APRIL Set	MAY Rise	MAY Set	JUNE Rise	JUNE Set	Day
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	
1	1034	2239	1107	....	0950	2329	1129	0032	1225	0059	1351	0122	1
2	1110	2336	1152	0032	1039	....	1232	0129	1321	0140	1441	0154	2
3	1147	....	1242	0137	1134	0035	1333	0218	1414	0216	1532	0227	3
4	1225	0035	1339	0242	1234	0139	1430	0301	1505	0249	1623	0301	4
5	1308	0136	1440	0345	1336	0239	1525	0339	1555	0321	1715	0338	5
6	1355	0240	1543	0444	1438	0332	1617	0414	1645	0353	1809	0419	6
7	1449	0346	1646	0536	1538	0419	1708	0447	1736	0426	1902	0504	7
8	1549	0452	1747	0623	1635	0501	1758	0519	1827	0501	1954	0553	8
9	1653	0556	1844	0703	1730	0539	1849	0551	1920	0539	2043	0645	9
10	1758	0654	1938	0740	1822	0613	1940	0625	2014	0621	2128	0740	10
11	1901	0745	2031	0814	1913	0646	2032	0700	2106	0707	2210	0836	11
12	2001	0830	2121	0846	2004	0718	2125	0740	2157	0757	2249	0931	12
13	2057	0909	2212	0918	2055	0750	2219	0823	2245	0850	2325	1026	13
14	2150	0944	2303	0951	2146	0824	2311	0910	2329	0944	....	1121	14
15	2241	1016	2355	1026	2239	0901	....	1001	....	1040	0001	1217	15
16	2331	1048	....	1104	2333	0942	0001	1055	0010	1136	0037	1314	16
17	....	1120	0048	1146	....	1026	0049	1151	0049	1232	0115	1413	17
18	0021	1154	0142	1233	0026	1115	0133	1248	0126	1328	0156	1517	18
19	0112	1230	0236	1325	0118	1208	0213	1345	0202	1425	0242	1624	19
20	0205	1309	0329	1420	0208	1304	0252	1443	0240	1525	0335	1733	20
21	0259	1354	0418	1519	0255	1402	0330	1541	0320	1629	0435	1841	21
22	0354	1443	0505	1619	0339	1501	0408	1642	0405	1736	0540	1944	22
23	0448	1537	0548	1719	0420	1600	0448	1745	0455	1847	0648	2039	23
24	0540	1635	0628	1818	0459	1700	0531	1852	0553	1957	0755	2127	24
25	0629	1735	0707	1918	0538	1801	0619	2001	0656	2102	0858	2209	25
26	0713	1834	0745	2019	0617	1903	0713	2111	0803	2201	0957	2247	26
27	0755	1934	0824	2120	0658	2008	0812	2219	0910	2252	1052	2321	27
28	0833	2032	0905	2224	0743	2115	0916	2320	1013	2336	1144	2354	28
29	0911	2130	....	....	0832	2223	1022	....	1113	....	1235	....	29
30	0948	2229	....	....	0927	2330	1125	0013	1208	0015	1326	0027	30
31	1026	2330	....	....	1027	....	....	....	1301	0050	....	....	31

Day	JULY Rise	JULY Set	AUGUST Rise	AUGUST Set	SEPTEMBER Rise	SEPTEMBER Set	OCTOBER Rise	OCTOBER Set	NOVEMBER Rise	NOVEMBER Set	DECEMBER Rise	DECEMBER Set	Day
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	
1	1417	0101	1541	0141	1642	0305	1632	0341	1702	0520	1725	0618	1
2	1510	0137	1632	0231	1722	0402	1709	0438	1750	0626	1830	0727	2
3	1603	0217	1721	0325	1800	0459	1747	0537	1845	0734	1938	0833	3
4	1656	0300	1806	0421	1837	0556	1828	0637	1946	0844	2046	0932	4
5	1749	0348	1847	0518	1914	0653	1913	0741	2052	0950	2151	1023	5
6	1839	0439	1926	0614	1953	0752	2003	0847	2158	1051	2252	1108	6
7	1926	0534	2003	0711	2034	0852	2059	0955	2302	1144	2349	1147	7
8	2009	0630	2039	0807	2119	0955	2200	1101	....	1231	....	1223	8
9	2049	0726	2116	0903	2210	1100	2304	1203	0003	1311	0043	1257	9
10	2127	0822	2154	1001	2306	1206	....	1259	0100	1348	0135	1331	10
11	2203	0917	2235	1100	....	1309	0008	1349	0155	1423	0226	1406	11
12	2238	1012	2321	1203	0007	1409	0110	1432	0247	1456	0318	1442	12
13	2314	1108	....	1307	0110	1503	0209	1511	0338	1530	0410	1521	13
14	2353	1206	0013	1413	0214	1550	0304	1547	0430	1605	0503	1604	14
15	....	1306	0111	1516	0315	1633	0358	1621	0522	1642	0556	1651	15
16	0036	1410	0214	1615	0414	1711	0450	1654	0615	1723	0648	1741	16
17	0125	1516	0319	1707	0510	1746	0542	1729	0708	1807	0737	1833	17
18	0220	1623	0423	1754	0604	1821	0635	1805	0801	1854	0824	1927	18
19	0322	1727	0525	1836	0657	1855	0727	1843	0852	1945	0906	2020	19
20	0427	1825	0624	1913	0750	1929	0821	1925	0940	2038	0945	2113	20
21	0534	1916	0720	1948	0842	2006	0914	2010	1025	2131	1022	2206	21
22	0639	2001	0814	2022	0935	2046	1007	2059	1107	2225	1057	2258	22
23	0741	2041	0907	2057	1029	2129	1057	2150	1145	2318	1131	2352	23
24	0838	2118	0959	2132	1122	2215	1145	2243	1222	....	1206	....	24
25	0933	2152	1052	2209	1214	2305	1229	2338	1257	0011	1243	0047	25
26	1026	2225	1145	2250	1304	2358	1310	....	1332	0105	1324	0145	26
27	1117	2259	1238	2334	1351	....	1348	0032	1409	0201	1411	0247	27
28	1209	2335	1332	....	1435	0053	1425	0127	1450	0259	1504	0353	28
29	1302	....	1423	0022	1516	0148	1502	0222	1535	0402	1605	0502	29
30	1355	0013	1513	0114	1554	0245	1539	0319	1626	0508	1712	0609	30
31	1448	0055	1559	0209	....	....	1618	0418	....	....	1821	0712	31

Time meridian 150° W. 0000 is midnight. 1200 is noon.

TABLE 7.—CONVERSION OF FEET TO METERS

Feet	Tenths of a Foot										Feet
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0	0.00	0.03	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27	0
1	0.30	0.34	0.37	0.40	0.43	0.46	0.49	0.52	0.55	0.58	1
2	0.61	0.64	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.88	2
3	0.91	0.94	0.98	1.01	1.04	1.07	1.10	1.13	1.16	1.19	3
4	1.22	1.25	1.28	1.31	1.34	1.37	1.40	1.43	1.46	1.49	4
5	1.52	1.55	1.58	1.62	1.65	1.68	1.71	1.74	1.77	1.80	5
6	1.83	1.86	1.89	1.92	1.95	1.98	2.01	2.04	2.07	2.10	6
7	2.13	2.16	2.19	2.23	2.26	2.29	2.32	2.35	2.38	2.41	7
8	2.44	2.47	2.50	2.53	2.56	2.59	2.62	2.65	2.68	2.71	8
9	2.74	2.77	2.80	2.83	2.87	2.90	2.93	2.96	2.99	3.02	9
10	3.05	3.08	3.11	3.14	3.17	3.20	3.23	3.26	3.29	3.32	10
11	3.35	3.38	3.41	3.44	3.47	3.51	3.54	3.57	3.60	3.63	11
12	3.66	3.69	3.72	3.75	3.78	3.81	3.84	3.87	3.90	3.93	12
13	3.96	3.99	4.02	4.05	4.08	4.11	4.15	4.18	4.21	4.24	13
14	4.27	4.30	4.33	4.36	4.39	4.42	4.45	4.48	4.51	4.54	14
15	4.57	4.60	4.63	4.66	4.69	4.72	4.75	4.79	4.82	4.85	15
16	4.88	4.91	4.94	4.97	5.00	5.03	5.06	5.09	5.12	5.15	16
17	5.18	5.21	5.24	5.27	5.30	5.33	5.36	5.39	5.43	5.46	17
18	5.49	5.52	5.55	5.58	5.61	5.64	5.67	5.70	5.73	5.76	18
19	5.79	5.82	5.85	5.88	5.91	5.94	5.97	6.00	6.04	6.07	19
20	6.10	6.13	6.16	6.19	6.22	6.25	6.28	6.31	6.34	6.37	20
21	6.40	6.43	6.46	6.49	6.52	6.55	6.58	6.61	6.64	6.68	21
22	6.71	6.74	6.77	6.80	6.83	6.86	6.89	6.92	6.95	6.98	22
23	7.01	7.04	7.07	7.10	7.13	7.16	7.19	7.22	7.25	7.28	23
24	7.32	7.35	7.38	7.41	7.44	7.47	7.50	7.53	7.56	7.59	24
25	7.62	7.65	7.68	7.71	7.74	7.77	7.80	7.83	7.86	7.89	25
26	7.92	7.96	7.99	8.02	8.05	8.08	8.11	8.14	8.17	8.20	26
27	8.23	8.26	8.29	8.32	8.35	8.38	8.41	8.44	8.47	8.50	27
28	8.53	8.56	8.60	8.63	8.66	8.69	8.72	8.75	8.78	8.81	28
29	8.84	8.87	8.90	8.93	8.96	8.99	9.02	9.05	9.08	9.11	29
30	9.14	9.17	9.20	9.24	9.27	9.30	9.33	9.36	9.39	9.42	30
31	9.45	9.48	9.51	9.54	9.57	9.60	9.63	9.66	9.69	9.72	31
32	9.75	9.78	9.81	9.85	9.88	9.91	9.94	9.97	10.00	10.03	32
33	10.06	10.09	10.12	10.15	10.18	10.21	10.24	10.27	10.30	10.33	33
34	10.36	10.39	10.42	10.45	10.49	10.52	10.55	10.58	10.61	10.64	34
35	10.67	10.70	10.73	10.76	10.79	10.82	10.85	10.88	10.91	10.94	35
36	10.97	11.00	11.03	11.06	11.09	11.13	11.16	11.19	11.22	11.25	36
37	11.28	11.31	11.34	11.37	11.40	11.43	11.46	11.49	11.52	11.55	37
38	11.58	11.61	11.64	11.67	11.70	11.73	11.77	11.80	11.83	11.86	38
39	11.89	11.92	11.95	11.98	12.01	12.04	12.07	12.10	12.13	12.16	39
40	12.19	12.22	12.25	12.28	12.31	12.34	12.37	12.41	12.44	12.47	40
41	12.50	12.53	12.56	12.59	12.62	12.65	12.68	12.71	12.74	12.77	41
42	12.80	12.83	12.86	12.89	12.92	12.95	12.98	13.01	13.05	13.08	42
43	13.11	13.14	13.17	13.20	13.23	13.26	13.29	13.32	13.35	13.38	43
44	13.41	13.44	13.47	13.50	13.53	13.56	13.59	13.62	13.66	13.69	44
45	13.72	13.75	13.78	13.81	13.84	13.87	13.90	13.93	13.96	13.99	45
46	14.02	14.05	14.08	14.11	14.14	14.17	14.20	14.23	14.26	14.30	46
47	14.33	14.36	14.39	14.42	14.45	14.48	14.51	14.54	14.57	14.60	47
48	14.63	14.66	14.69	14.72	14.75	14.78	14.81	14.84	14.87	14.90	48
49	14.94	14.97	15.00	15.03	15.06	15.09	15.12	15.15	15.18	15.21	49
50	15.24	15.27	15.30	15.33	15.36	15.39	15.42	15.45	15.48	15.51	50

PUBLICATIONS RELATING TO TIDES AND TIDAL CURRENTS

TIDE TABLES

Advance information relative to the rise and fall of the tide is given in annual tide tables. These tables include the predicted times and heights of high and low waters for every day in the year for a number of reference stations and differences for obtaining similar predictions for numerous other places.

Tide Tables, Central and Western Pacific Ocean and Indian Ocean.
Tide Tables, East Coast of North and South America (Including Greenland).
Tide Tables, Europe and West Coast of Africa (Including the Mediterranean Sea).
Tide Tables, West Coast of North and South America (Including the Hawaiian Islands).
Tide Tables, Alaskan Supplement.

TIDAL CIRCULATION AND WATER LEVEL FORECAST ATLAS

This atlas series provides a composite view of the total tidal phenomenon for major estuaries of the United States. Twelve pairs of hourly charts are used to depict the information. The first of each pair presents contours of mean tidal height throughout the specified estuary. Inserts and a vertical section provide additional tidal information. The second chart presents the speed and direction of the tidal current throughout the area. Corange, cotidal, cospeed, and cophasse charts are shown in the following section. Finally, daily tide predictions are provided for important locations, in tabular form, for several years in advance.

Tidal Circulation and Water Level Forecast Atlas, Delaware River and Bay

TIDAL CURRENT TABLES

Accompanying the rise and fall of the tide is a periodic horizontal flow of the water known as the tidal current. Advance information relative to these currents is made available in annual tidal current tables which include daily predictions of the times of slack water and the times and velocities of strength of flood and ebb currents for a number of waterways together with differences for obtaining predictions for numerous other places.

Tidal Current Tables, Atlantic Coast of North America
Tidal Current Tables, Pacific Coast of North America and Asia

TIDAL CURRENT CHART

Each publication consists of a set of 12 charts which depict, by means of arrows and figures, the direction and speed of the tidal current for each hour of the tidal cycle. The charts, which may be used for any year, present a comprehensive view of the tidal current movement in the respective waterways as a whole and also supply a means for readily determining for any time the direction and speed of the current at various localities throughout the water areas covered. The Narragansett Bay tidal current chart is to be used with the annual tide tables. The other charts require the annual tidal current tables.

Tidal Current Charts, Boston Harbor.
Tidal Current Charts, Charleston Harbor, S.C.
Tidal Current Charts, Long Island Sound and Block Island Sound.
Tidal Current Charts, Narragansett Bay.
Tidal Current Charts, Narragansett Bay to Nantucket Sound.
Tidal Current Charts, New York Harbor.
Tidal Current Charts, Puget Sound, Northern Part.
Tidal Current Charts, Puget Sound, Southern Part.
Tidal Current Charts, San Francisco Bay.
Tidal Current Charts, Upper Chesapeake Bay.
Tidal Current Charts, Tampa Bay.

TIDAL CURRENT DIAGRAMS

The tidal current diagrams are a series of 12 monthly diagrams to be used with the tidal current charts to give the user a convenient method to determine the current flow on a particular day.

Tidal Current Diagrams for Long Island Sound and Block Island Sound.
Tidal Current Diagrams for Boston Harbor.
Tidal Current Diagrams for New York Harbor.

GLOSSARY OF TERMS

ANNUAL INEQUALITY—Seasonal variation in the water level or current, more or less periodic, due chiefly to meteorological causes.

APOGEAN TIDES OR TIDAL CURRENTS—Tides of decreased range or currents of decreased speed occurring monthly as the result of the Moon being in apogee (farthest from the Earth).

AUTOMATIC TIDE GAGE—An instrument that automatically registers the rise and fall of the tide. In some instruments, the registration is accomplished by recording the heights at regular intervals in digital format, in others by a continuous graph in which the height, versus corresponding time of the tide, is recorded.

BENCH MARK (BM)—A fixed physical object or marks used as reference for a vertical datum. A *tidal bench mark* is one near a tide station to which the tide staff and tidal datums are referred. A *Geodetic bench mark* identifies a surveyed point in the National Geodetic Vertical Network.

CHART DATUM—The tidal datum to which soundings on a chart are referred. It is usually taken to correspond to low water elevation of the tide, and its depression below mean sea level is represented by the symbol Zo.

CURRENT—Generally, a horizontal movement of water. Currents may be classified as *tidal* and *nontidal*. Tidal currents are caused by gravitational interactions between the Sun, Moon, and Earth and are a part of the same general movement of the sea that is manifested in the vertical rise and fall, called *tide*. Nontidal currents include the permanent currents in the general circulatory systems of the sea as well as temporary currents arising from more pronounced meteorological variability.

CURRENT DIFFERENCE—Difference between the time of slack water (or minimum current) or strength of current in any locality and the time of the corresponding phase of the tidal current at a reference station, for which predictions are given in the *Tidal Current Tables*.

CURRENT ELLIPSE—A graphic representation of a rotary current in which the velocity of the current at different hours of the tidal cycle is represented by radius vectors and vectorial angles. A line joining the extremities of the radius vectors will form a curve roughly approximating an ellipse. The cycle is completed in one-half tidal day or in a whole tidal day according to whether the tidal current is of the semidiurnal or the diurnal type. A current of the mixed type will give a curve of two unequal loops each tidal day.

CURRENT METER—An instrument for measuring the speed and direction or just the speed of a current. The measurements are usually Eulerian since the meter is most often fixed or moored at a specific location.

DATUM (vertical)—For marine applications, a base elevation used as a reference from which to reckon heights or depths. It is called a *tidal datum* when defined by a certain phase of the tide. Tidal datums are local datums and should not be extended into areas which have differing topographic features without substantiating measurements. In order that they may be recovered when needed, such datums are referenced to fixed points known as *bench marks*.

DAYLIGHT SAVING TIME—A time used during the summer in some localities in which clocks are advanced 1 hour from the usual standard time.

DIURNAL—Having a period or cycle of approximately 1 tidal day. Thus, the tide is said to be diurnal when only one high water and one low water occur during a tidal day, and the tidal current is said to be diurnal when there is a single flood and single ebb period in the tidal day. A rotary current is diurnal if it changes its direction through all points of the compass once each tidal day.

DIURNAL INEQUALITY—The difference in height of the two high waters or of the two low waters of each day; also the difference in speed between the two flood tidal currents or the two ebb tidal currents of each day. The difference changes with the declination of the Moon and to a lesser extent with the declination of the Sun. In general, the inequality tends to increase with an increasing declination, either north or south, and to diminish as the Moon approaches the Equator. *Mean diurnal high water inequality* (DHQ) is one-half the average difference between the two high waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of all high waters from the mean of

the higher high waters. *Mean diurnal low water inequality* (DLQ) is one-half the average difference between the two low waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of the lower low waters from the mean of all low waters. *Tropic high water inequality* (HWQ) is the average difference between the two high waters of the day at the times of the tropic tides. *Tropic low water inequality* (LWQ) is the average difference between the two low waters of th day at the times of the tropic tides. Mean and tropic inequalities as defined above are applicable only when the type of tide is either semidiurnal or mixed. Diurnal inequality is sometimes called *declinational inequality.*

DOUBLE EBB—An ebb tidal current where, after ebb begins, the speed increases to a maximum called *first ebb;* it then decreases, reaching a *minimum ebb* near the middle of the ebb period (and at some places it may actually run in a flood direction for a short period); it then again ebbs to a maximum speed called *second ebb* after which it decreases to slack water.

DOUBLE FLOOD—A flood tidal current where, after flood begins, the speed increases to a maximum called first flood; it then decreases, reaching a minimum flood near the middle of the flood period (and at some places it may actually run in an ebb direction for a short period); it then again floods to a maximum speed called second flood after which it decreases to slack water.

DOUBLE TIDE—A double-headed tide, that is, a high water consisting of two maxima of nearly the same height separated by a relatively small depression, or a low water consisting of two minima separated by a relatively small elevation. Sometimes, it is called an *agger.*

DURATION OF FLOOD AND DURATION OF EBB—*Duration of flood* is the interval of time in which a tidal current is flooding, and the *duration of ebb* is the interval in which it is ebbing. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tidal current or a period of 24.84 hours for a diurnal current. In a normal semidiurnal tidal current, the duration of flood and duration of ebb will each be approximately equal to 6.21 hours, but the times may be modified greatly by the presence of a nontidal flow. In a river the duration of ebb is usually longer than the duration of flood because of the freshwater discharge, especially during the spring when snow and ice melt are the predominant influences.

DURATION OF RISE AND DURATION OF FALL—*Duration of rise* is the interval from low water to high water, and *duration of fall* is the interval from high water to low water. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tide or a period of 24.84 hours for a diurnal tide. In a normal semidiurnal tide, the duration of rise and duration of fall will each be approximately equal to 6.21 hours, but in shallow waters and in rivers there is a tendency for a decrease in the duration of rise and a corresponding increase in the duration of fall.

EBB CURRENT—The movement of a tidal current away from shore or down a tidal river or estuary. In the mixed type of reversing tidal current, the terms *greater ebb* and *lesser ebb* are applied respectively to the ebb tidal currents of greater and lesser speed of each day. The terms *maximum ebb* and *minimum ebb* are applied to the maximum and minimum speeds of a current running continuously ebb, the speed alternately increasing and decreasing without coming to a slack or reversing. The expression *maximum ebb* is also applicable to any ebb current at the time of greatest speed.

EQUATORIAL TIDAL CURRENTS—Tidal currents occurring semimonthly as a result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tidal current is at a minimum.

EQUATORIAL TIDES—Tides occurring semi monthly as the result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tide is at a minimum.

FLOOD CURRENT—The movement of a tidal current toward the shore or up a tidal river or estuary. In the mixed type of reversing current, the terms *greater flood* and *lesser flood* are applied respectively to the flood currents of greater and lesser speed of each day. The terms *maximum flood* and *minimum flood* are applied to the maximum and minimum speeds of a flood current, the speed of which alternately increases and decreases without coming to a slack or reversing. The expression *maximum flood* is also applicable to any flood current at the time of greatest speed.

GREAT DIURNAL RANGE (Gt)—The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, *diurnal range.*

GULF COAST LOW WATER DATUM—A chart datum. Specifically, the tidal datum formerly designated

for the coastal waters of the Gulf Coast of the United States. It was defined as *mean lower low water* when the type of tide was mixed and *mean low water* when the type of tide was diurnal.

HALF-TIDE LEVEL—See *mean tide level.*

HARMONIC ANALYSIS—The mathematical process by which the observed tide or tidal current at any place is separated into basic harmonic constituents.

HARMONIC CONSTANTS—The amplitudes and epochs of the harmonic constituents of the tide or tidal current at any place.

HARMONIC CONSTITUENT—One of the harmonic elements in a mathematical expression for the tide-producing force and in corresponding formulas for the tide or tidal current. Each constituent represents a periodic change or variation in the relative positions of the Earth, Moon, and Sun. A single constituent is usually written in the form $y=A\cos(at+\alpha)$, in which y is a function of time as expressed by the symbol t and is reckoned from a specific origin. The coefficient A is called the amplitude of the constituent and is a measure of its relative importance. The angle $(at+\alpha)$ changes uniformly and its value at any time is called the phase of the constituent. The speed of the constituent is the rate of change in its phase and is represented by the symbol a in the formula. The quantity α is the phase of the constituent at the initial instant from which the time is reckoned. The period of the constituent is the time required for the phase to change through 360° and is the cycle of the astronomical condition represented by the constituent.

HIGH WATER (HW)—The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, *high tide*, is discouraged.

HIGHER HIGH WATER (HHW)—The higher of the two high waters of any tidal day.

HIGHER LOW WATER (HLW)—The higher of the two low waters of any tidal day.

HYDRAULIC CURRENT—A current in a channel caused by a difference in the surface level at the two ends. Such a current may be expected in a strait connecting two bodies of water in which the tides differ in time or range. The current in the East River, N.Y., connecting Long Island Sound and New York Harbor, is an example.

KNOT—A speed unit of 1 international nautical mile (1,852.0 meters or 6,076.11549 international feet) per hour.

LOW WATER (LW)—The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of meteorological conditions. Use of the synonymous term, *low tide*, is discouraged.

LOWER HIGH WATER (LHW)—The lower of the two high waters of any tidal day.

LOWER LOW WATER (LLW)—The lower of the two low waters of any tidal day.

LUNAR DAY—The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.

LUNAR INTERVAL—The difference in time between the transit of the Moon over the meridian of Greenwich and over a local meridian. The average value of this interval expressed in hours is 0.069 L, in which L is the local longitude in degrees, positive for west longitude and negative for east longitude. The lunar interval equals the difference between the local and Greenwich interval of a tide or current phase.

LUNICURRENT INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and a specified phase of the tidal current following the transit. Examples: *strength of flood interval* and *strength of ebb interval*, which may be abbreviated to *flood interval* and *ebb interval*, respectively. The interval is described as local or Greenwich according to whether the reference is to the Moon's transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

LUNITIDAL INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and the following high or low water. The average of all high water intervals for all phases of the Moon is known as *mean high water lunitidal interval* and is abbreviated to *high water interval* (HWI). Similarly the mean *low water lunitidal interval* is abbreviated to *low water interval* (LWI). The interval is described as local or Greenwich according to whether the reference is to the transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

MEAN HIGH WATER (MHW)—A tidal datum. The arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations

with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

MEAN HIGHER HIGH WATER (MHHW)—A tidal datum. The arithmetic mean of the higher high water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the higher high water of each pair of high waters, or the only high water of a tidal day is included in the mean.

MEAN HIGHER HIGH WATER LINE (MHHWL)—The intersection of the land with the water surface at the elevation of mean higher high water.

MEAN LOW WATER (MLW)—A tidal datum. The arithmetic mean of the low water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

MEAN LOW WATER SPRINGS (MLWS)—A tidal datum. Frequently abbreviated *spring low water*. The arithmetic mean of the low water heights occurring at the time of the spring tides observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch).

MEAN LOWER LOW WATER (MLLW)—A tidal datum. The arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the lower low water of each pair of low waters, or the only low water of a tidal day is included in the mean.

MEAN RANGE OF TIDE (Mn)—The difference in height between mean high water and mean low water.

MEAN RIVER LEVEL—A tidal datum. The average height of the surface of a tidal river at any point for all stages of the tide observed over a 19-year Metonic cycle (the National Tidal Datum Epoch), usually determined from hourly height readings. In rivers subject to occasional freshets the river level may undergo wide variations, and for practical purposes certain months of the year may be excluded in the determination of tidal datums. For charting purposes, tidal datums for rivers are usually based on observations during selected periods when the river is at or near low water stage.

MEAN SEA LEVEL (MSL)—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.

MEAN TIDE LEVEL (MTL)—Also called half-tide level. A tidal datum midway between mean high water and mean low water.

MIXED TIDE—Type of tide with a large inequality in the high and/or low water heights, with two high waters and two low waters usually occurring each tidal day. In strictness, all tides are mixed but the name is usually applied to the tides intermediate to those predominantly semidiurnal and those predominantly diurnal.

NEAP TIDES OR TIDAL CURRENTS—Tides of decreased range or tidal currents of decreased speed occurring semimonthly as the result of the Moon being in quadrature. The *neap range* (Np) of the tide is the average semidiurnal range occurring at the time of neap tides and is most conveniently computed from the harmonic constants. It is smaller than the mean range where the type of tide is either semidiurnal or mixed and is of no practical significance where the type of tide is diurnal. The average height of the high waters of the neap tides is called *neap high water* or *high water neaps* (MHWN) and the average height of the corresponding low waters is called *neap low water* or *low water neaps* (MLWN).

PERIGEAN TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring monthly as the result of the Moon being in perigee or nearest the Earth. The *perigean range* (Pn) of tide is the average semidiurnal range occurring at the time of perigean tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal.

RANGE OF TIDE—The difference in height between consecutive high and low waters, the *mean range* is the difference in height between mean high water and mean low water. Where the type of tide is diurnal the mean range is the same as the diurnal range. For other ranges, see great diurnal, spring, neap, perigean, apogean, and tropic tides.

REFERENCE STATION—A tide or current station for which independent daily predictions are given in the *Tide Tables* and *Tidal Current Tables*, and from which corresponding predictions are obtained for subordinate stations by means of differences and ratios.

REVERSING CURRENT—A tidal current which flows alternately in approximately opposite directions with a slack water at each reversal of direction. Currents of this type usually occur in rivers and straits where the direction of flow is more or less restricted to certain channels. When the movement is towards the shore or up a stream, the current is said to be flooding, and when in the opposite direction it is said to be ebbing. The combined flood and ebb movement including the slack water covers, on an average, 12.42 hours for the semidiurnal current. If unaffected by a nontidal flow, the flood and ebb movements will each last about 6 hours, but when combined with such a flow, the durations of flood and ebb may be quite unequal. During the flow in each direction the speed of the current will vary from zero at the time of slack water to a maximum about midway between the slacks.

ROTARY CURRENT—A tidal current that flows continually with the direction of flow changing through all points of the compass during the tidal period. Rotary currents are usually found offshore where the direction of flow is not restricted by any barriers. The tendency for the rotation in direction has its origin in the Coriolis force and, unless modified by local conditions, the change is clockwise in the Northern Hemisphere and counterclockwise in the Southern. The speed of the current usually varies throughout the tidal cycle, passing through the two maxima in approximately opposite directions and the two minima with the direction of the current at approximately 90° from the direction at time of maximum speed.

SEMIDIURNAL—Having a period or cycle of approximately one-half of a tidal day. The predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

SET (OF CURRENT)—The direction *towards* which the current flows.

SLACK WATER—The state of a tidal current when its speed is near zero, especially the moment when a reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progressive tidal waves, slack water occurs midway between high and low water.

SPRING TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring semimonthly as the result of the Moon being new or full. The *spring range* (Sg) of tide is the average semidiurnal range occurring at the time of spring tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The mean of the high waters of the spring tide is called *spring high water* or *mean high water springs* (MHWS), and the average height of the corresponding low waters is called *spring low water* or *mean low water springs* (MLWS).

STAND OF TIDE—Sometimes called a platform tide. An interval at high or low water when there is no sensible change in the height of the tide. The water level is stationary at high and low water for only an instant, but the change in level near these times is so slow that it is not usually perceptible. In general, the duration of the apparent stand will depend upon the range of tide, being longer for a small range than for a large range, but where there is a tendency for a double tide the stand may last for several hours even with a large range of tide.

STANDARD TIME—A kind of time based upon the transit of the Sun over a certain specified meridian, called the *time meridian*, and adopted for use over a considerable area. With a few exceptions, standard time is based upon some meridian which differs by a multiple of 15° from the meridian of Greenwich.

STRENGTH OF CURRENT—Phase of tidal current in which the speed is a maximum; also the speed at this time. Beginning with slack before flood in the period of a reversing tidal current (or minimum before flood in a rotary current), the speed gradually increases to flood strength and then diminishes to slack before ebb (or minimum before ebb in a rotary current), after which the current turns in direction, the speed increases to ebb strength and then diminishes to slack before flood completing the cycle. If it is assumed that the speed throughout the cycle varies as the ordinates of a cosine curve, it can be shown that the average speed for an entire flood or ebb period is equal to $2/\pi$ or 0.6366 of the speed of the corresponding strength of current.

SUBORDINATE CURRENT STATION—(1) A current station from which a relatively short series of

observations is reduced by comparison with simultaneous observations from a control current station. (2) A station listed in the *Tidal Current Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

SUBORDINATE TIDE STATION—(1) A tide station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a tide station with a relatively long series of observations. (2) A station listed in the *Tide Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

TIDAL CURRENT TABLES—Tables which give daily predictions of the times and speeds of the tidal currents. These predictions are usually supplemented by current differences and constants through which additional predictions can be obtained for numerous other places.

TIDAL DIFFERENCE—Difference in time or height of a high or low water at a subordinate station and at a reference station for which predictions are given in the *Tide Tables*. The difference, when applied according to sign to the prediction at the reference station, gives the corresponding the time or height for the subordinate station.

TIDE—The periodic rise and fall of the water resulting from gravitational interactions between the Sun, Moon, and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

TIDE TABLES—Tables which give daily predictions of the times and heights of high and low waters. These predictions are usually supplemented by tidal differences and constants through which additional predictions can be obtained for numerous other places.

TIME MERIDIAN—A meridian used as a reference for time.

TROPIC CURRENTS—Tidal currents occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times the tendency of the Moon to produce a diurnal inequality in the current is at a maximum.

TROPIC RANGES—The *great tropic range* (Gc), or *tropic range*, is the difference in height between tropic higher high water and tropic lower low water. The *small tropic range* (Sc) is the difference in height between tropic lower high water and tropic higher low water. The *mean tropic range* (Mc) is the mean between the great tropic range and the small tropic range. The small tropic range and the mean tropic range are applicable only when the type of tide is semidiurnal or mixed. Tropic ranges are most conveniently computed from the harmonic constants.

TROPIC TIDES—Tides occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times there is a tendency for an increase in the diurnal range. The tidal datums pertaining to the tropic tides are designated as *tropic higher high water* (TcHHW), *tropic lower high water* (TcLHW), *tropic higher low water* (TcHLW), and *tropic lower low water* (TcLLW).

TYPE OF TIDE—A classification based on characteristic forms of a tide curve. Qualitatively, when the two high waters and two low waters of each tidal day are approximately equal in height, the tide is said to be *semidiurnal;* when there is a relatively large diurnal inequality in the high or low waters or both, it is said to be *mixed;* and when there is only one high water and one low water in each tidal day, it is said to be *dirunal.*

VANISHING TIDE—In a mixed tide with very large diurnal inequality, the lower high water (or higher low water) frequently becomes indistinct (or vanishes) at time of extreme declinations. During these periods the diurnal tide has such overriding dominance that the semidiurnal tide, although still present, cannot be readily seen on the tide curve.

INDEX TO STATIONS
(Numbers refer to table 2)

[Stations marked with an asterisk (*) are reference stations for which daily predictions are given in table 1. Page numbers of reference stations are given in parentheses.]

	No.
A	
Aberdeen, Wash * (88)	947
Acajutla, El Salvador	367
Acapulco, Mexico	377
Active Pass, British Columbia	1159
Adak Bight, Alaska	2197
Adak Island, Alaska	2191-2207
Addenbroke Island, British Columbia	1251
Admiralty Head, Wash	983
Admiralty Inlet, Wash	983-995
Admiralty Island, Alaska	1615,1679
Adugak Island, Alaska	2143
Afognak Island, Alaska	1943-2021
Agattu Island, Alaska	2241
Aialik Bay, Alaska	1887
Akun Bay, Alaska	2101
Akun Island, Alaska	2099,2101
Akutan Harbor, Alaska	2103
Akutan Island, Alaska	2103
Alameda, Calif	529
Alameda Creek, Calif	561
Alaska	1299-2355
Alaska Peninsula	2023-2081
Ala Spit, Wash	1095
Alava Bay, Alaska	1353
Albatross Anchorage, Alaska	2057
Albion, Calif	769
Alcan Harbor, Alaska	2239
Alcatraz Island, Calif	515
Aleck Bay, Wash	1103
Alert Bay, British Columbia	1215
Aleutian Islands, Alaska	2083-2251
Algarrobo, Chile	171
Alitak Bay, Alaska	1983
Allyn, Wash	1063
Alsea Bay, Oreg	831
Alviso Slough, Calif	619
Amak Island, Alaska	2253
Amapala, Honduras	361
Amchitka Island, Alaska	2231,2233
American Bay, Alaska	1457
Amukta Island, Alaska	2159
Anacortes, Wash	1107
Anchorage, Alaska * (136)	1927
Anchorage Bay, Alaska	2033
Anchor Point, Wrangell Narrows, Alaska	1581
Anchor Point, Cook Inlet, Alaska	1912
Ancud, Chile	129
Anderson Bay, Alaska	2113
Andreon Bay, Alaska	1943
Andrew Bay, Alaska	2207
Angel Island, Calif	619,621
Angostura Guia, Chile	73
Angostura Inglesa, Chile	77
Anguilla Island, Alaska	1511
Annette Island, Alaska	1341,1381
Ano Nuevo Island, Calif	501
Antioch, Calif	701
Antofagasta, Chile * (20)	213
Apokak Creek entrance, Alaska	2301
Apoon Mouth, Alaska	2333
Applegate Cove, Alaska	2151
Applegate Island, Alaska	1875
Arcadia, Wash	1067
Arcata Wharf, Calif	801
Arctic Ocean	2347-2355
Arena Cove, Calif	765
Argentina	1-5
Arica, Chile	229
Arletta, Wash	1045
Astoria, Oreg * (84)	881
Astoria, Oreg	877-881
Atka Island, Alaska	2163-2175
Atkinson Point, British Columbia	1169
Attu Island, Alaska	2243-2251
Auke Bay, Alaska	1647
Avalon, Calif	461
B	
Bahia Aguirre, Argentina	3
Bahia Borja, Chile	37
Bahia Buen Suceso, Argentina	1
Bahia Coliumo, Chile	155
Bahia Cuevita, Colombia	303
Bahia Cupica, Colombia	309
Bahia de Chame, Panama	327
Bahia de Culebra, Costa Rica	349
Bahia de Darwin, Galapagos Islands	293
Bahia de Perry, Galapagos Islands	289
Bahia Felipe, Chile	17
Bahia Gente Grande, Chile	23
Bahia Honda, Panama	333
Bahia Huarmey, Peru	243
Bahia India, Chile	65
Bahia Isabela, Galapagos Islands	285
Bahia Linao, Chile	119
Bahia Lota, Chile	151
Bahia Manta, Ecuador	271
Bahia Octavia, Colombia	311
Bahia Pina, Panama	313
Bahia Posesion, Chile	11
Bahia Santiago, Chile	15
Bahia Snug, Chile	31
Bahia Solano, Colombia	307
Bahia Swallow, Chile	39
Bahia Tictoc, Chile	107
Bahia Tongoy, Chile	189
Bahia Tuesday, Chile	53
Bahia Ushuaia, Argentina	5
Bahia Uvita, Costa Rica	341
Bahia Wood, Chile	33
Baja, Calif	399-403
Baker Bay, Wash	867,869
Balboa Bay, Alaska	2057
Balboa, Panama * (44)	321
Balboa Pier, Calif	423
Bamfield, British Columbia	1225
Banco Direccion, Chile	13
Bandon, Oreg	813
Bangor Wharf, Wash	1001
Baranof, Alaska	1677
Baranof Island, Alaska	1661-1665,1695-1713
Barkley Sound, British Columbia	1225
Barlow Cove, Alaska	1651
Barnard Harbor, British Columbia	1265
Barren Island, Alaska	1307
Barren Islands, Alaska	1901
Bartlett Cove, Alaska	1783
Barview, Oreg	851
Bay Center, Wash	927

	No.
Bay City, Oreg.	857
Bay City, Wash.	941
Bay Farm Island, Calif.	535
Bay of Waterfalls, Alaska	2201
Bay Slough (east end), Calif.	565,567
Baynes Sound, British Columbia	1179
Bayovar, Peru	251
Bear Bay, Alaska	1725
Beauty Bay, Alaska	1893
Beaver Bay, Alaska	2059
Bear Cove, Kachemak Bay, Alaska	1911
Beaver Inlet, Alaska	2133
Beaver Passage, British Columbia	1279
Bechers Bay, Calif.	469
Bechevin Bay, Alaska	2175
Beck Island, Alaska	1589
Behm Canal, Alaska	1353-1379
Bella Bella, British Columbia	1255
Bella Coola, British Columbia	1259
Bell Arm, Alaska	1367
Bellingham, Wash.	1121
Bellingham Bay, Wash.	1119,1121
Benicia, Calif.	673
Bergh Cove, British Columbia	1243
Bering Sea, Alaska	2305-2345
Berkeley, Calif.	625
Bethel, Alaska	2303
Big Bay, Alaska	2019
Bjorka Island, Alaska	1699
Bishop Cut, Calif.	719
Black, Alaska	2327
Black River, Alaska	2327
Black Rock, Alaska	2287
Blackfish Sound, British Columbia	1211
Blackslough Landing, Calif.	709
Blaine, Wash.	1139
Blake Island, Alaska	1427
Blakes Landing, Calif.	755
Blanco Encalada, Chile	211
Blunden Harbor, British Columbia	1213
Boca de Quadra, Alaska	1335
Bodega Harbor, Calif.	761
Bogoslof Island, Alaska	2135
Bolinas Bay, Calif.	747
Bolinas Lagoon, Calif.	749
Boot Bay, Alaska	2199
Borden Highway Bridge, Calif.	728,729
Bradfield Canal, Alaska	1427
Bradmoor Island	689
Brazos Drawbridge	665
Bremerton, Wash.	1031
Brighton, Oreg.	861
Bristol Bay, Alaska	2253-2287
British Columbia	1149-1329
Brookings, Oreg.	807
Brown Cove, Alaska	1607
Brownsville, Wash.	1021
Bucareli Bay, Alaska	1501-1507
Buchupureo, Chile	157
Bucksport, Calif.	795
Budd Inlet, Wash.	1075,1077
Buenaventura, Colombia * (40)	297
Bugle Point, Alaska	2179
Burns Point, Wash.	1071
Burrard Inlet, British Columbia	1169,1171
Burroughs Bay, Alaska	1365
Burrows Bay, Wash.	1105
Burton, Wash.	1039
Bush Point, Wash.	993
Bute Inlet, British Columbia	1189
Butterworth Island, Alaska	1565

C

Cabo de Hornos, Chile * (4)	61
Cabo Pasado, Ecuador	275
Cabo Pilar, Chile	55
Cabrillo Beach, Calif.	435
Calaveras Point, Calif.	597
Caldera, Chile	201
Caleta Aeolian, Galapagos Islands	291
Caleta Barranquillas, Chile	199
Caleta Junin, Chile	225
Caleta La Hacienda, Chile	143
Caleta Lobitos, Peru	257
Caleta Lobos, Chile	221
Caleta Oscuro, Chile	187
Caleta Pascuas, Chile	85
Caleta Playa Parda, Chile	41
Caleta Saint Martin, Chile	59
Caleta Sylvia, Chile	45
Caleta Tagus, Galapagos Islands	287
Caleta Totoralillo, Chile	193
California	405-805
Callao, Peru * (28)	239
Camp Cove, Alaska	1887
Campbell Island, British Columbia	1255
Canada	1149-1297
Canal Chacao, Chile	127,131
Canal Smyth, Chile	49-51
Canoe Bay, Alaska	2069
Canoe Cove, Alaska	1745
Cape Alava, Wash.	959
Cape Bingham, Alaska	1755
Cape Chacon, Alaska	1303
Cape Chianak, Alaska	2211
Cape Chunu, Alaska	2215
Cape Flattery, Wash.	961
Cape Flores, Alaska	1499
Cape Fox, Alaska	1309
Cabo de Hornos, Chile * (4)	61
Cape Mendocino, Calif.	783
Cape Mordvinof, Alaska	2091
Cape Muzon, Alaska	1299
Cape Ninilchik, Alaska	1913
Cape Ommaney, Alaska	1695
Cape Romanzof, Alaska	2325
Cape Sagak, Alaska	2145
Cape Sarichef, Alaska	2093
Cape Spencer, Alaska	1757
Cape Utalug, Alaska	2167
Carelmapu, Chile	131
Carmanah Point, British Columbia	1223
Carmel Bay, Calif.	481
Carmel Cove, Calif.	481
Carolyn Island, Alaska	2341
Carquinez Strait, Calif.	659-675
Carr Inlet, Wash.	1047,1049
Carrizal Bajo, Chile	197
Carroll Inlet, Alaska	1345,1347
Carry Inlet, Alaska	2021
Carter Bay, British Columbia	1263
Carter Spit, Alaska	2291
Case Inlet, Wash.	1061,1063
Castle Islands, Alaska	1571
Castro, Chile	115
Catalina Harbor, Calif.	459
Cathlamet, Wash.	889
Cemetery Point, Alaska	2187
Champerico, Guatemala	371
Chanaral de las Animas, Chile	205
Chance Cove, Alaska	1891
Charleston, Oreg.	815
Chatham Channel, British Columbia	1207
Chatham Sound, British Columbia	1281-1287
Chatham Strait, Alaska	1661-1693
Chehalis River, Wash.	949
Chemainus, British Columbia	1163
Chenega Island, Alaska	1879

	No.
Chernofski Harbor, Alaska	2119
Chevron Oil Company Pier, Calif	631
Chiachi Island, Alaska	2037
Chichagof Harbor, Alaska	2245
Chichagof Island, Alaska	1691,1737-1753
Chile	7-229
Chilkat Inlet, Alaska	1655
Chilkoot Inlet, Alaska	1657
Chimbote, Peru	245
Chinook, Wash	869
Chisak Bay, Alaska	2185
Cholmondeley Sound, Alaska	1393,1395
Chuckanut Bay, Wash	1119
Chuginadak Island, Alaska	2151
Clallam Bay, Wash	965
Clam Lagoon, Alaska	2191
Clarence Strait, Alaska	1381-1431
Clarksburg, Calif	743
Clayoquot, British Columbia	1229
Cleveland Passage, Alaska	1613
Coal Bay, Alaska	2061
Cobija, Chile	217
Cocos Island, Costa Rica	353
Cold Bay, Alaska	2073,2075
Collinsville, Calif	733
Colombia	295-311
Colorado River entrance, Mexico	395
Columbia River	865-917
Comfort Cove, Alaska	1825
Commencement Bay, Wash	1043
Comox, British Columbia	1179
Composite Island, Alaska	1789
Constantine Harbor, Alaska	2233
Constitucion, Chile	161
Controller Bay, Alaska	1805
Convenient Cove, Alaska	1369
Cook Inlet, Alaska	1901-1941
Coon Island, Alaska	1343
Coos Bay, Oreg	815-819
Copper Harbor, Alaska	1451
Copper River Delta, Alaska	1807-1809
Coquille River, Oreg	813
Coquimbo, Chile	191
Cordero Channel, British Columbia	1187
Cordova, Alaska * (120)	1819
Cordova Bay, Alaska	1433-1447
Corinto, Nicaragua	359
Corkscrew Slough, Calif	575
Cormorant Island, British Columbia	1215
Cornet Bay, Wash	1099
Coronation Island, Alaska	1537
Corral, Chile	135
Corte Madera Creek, Calif	635
Cortes Island, British Columbia	1181
Cosmos Point, Frederick Sound, Alaska	1603
Costa Rica	339-353
Coupeville, Wash	1092
Cowichan Bay, British Columbia	1161
Coyote Creek, Calif	605-613
Coyote Hills Slough, Calif	563
Coyote Point, Calif	555
Craig, Alaska	1505
Crescent Bay, Wash	969
Crescent City, Calif * (80)	805
Crescent Harbor, Wash	1091
Crockett, Calif	671
Cross Sound, Alaska	1755-1765
Crown Point, Mission Bay, Calif	415
Cruz Pass, Alaska	1507
Culross Bay, Alaska	1869
Curanipe, Chile	159
Cuyler Harbor, Calif	471
Cypress Island, Wash	1113,1117
Cyrus Cove, Alaska	1527

D

	No.
Dabob Bay, Wash	1003
Dall Island, Alaska	1299,1479-1487
Dangerous Passage, Alaska	1879
Davidson Inlet, Alaska	1515-1535
Davis River, Alaska	1327
Day Harbor, Alaska	1883
Deception Pass, Wash	1097,1099
Deer Passage, British Columbia	1185
Delarof Islands, Alaska	2225-2229
Dent Point, Alaska	2043
Des Moines, Wash	1037
Destruction Island, Wash	955
Devils Head, Wash	1058
Dewey Anchorage, Alaska	1413
Diamond Point, Alaska	1503
Discovery Bay, Wash	977
Discovery Passage, B. C	1183,1191
Diver Islands, Alaska	1489
Divide Head, Alaska	1395
Dixon Entrance	1293-1315
Dixon Harbor, Alaska	1793
Dofflemeyer Point, Wash	1075
Dog Point, Alaska	1703
Dolgoi Harbor, Alaska	2065
Dolgoi Island, Alaska	2065
Dolphin Point, Alaska	2013
Dora Harbor, Alaska	2083
Douglas Channel, British Columbia	1269
Douglas Island, Alaska	1645
Drift River Terminal, Alaska	1933
Driftwood Bay, Alaska	2147
Dry Bay, Alaska	1797
Dry Pass, Alaska	1743
Dry Spruce Island, Alaska	2007
Dry Strait, Frederick Sound, Alaska	1601
Duke Island, Alaska	1305,1331
Dumbarton Highway Bridge, Calif	585
Duncan Bay, British Columbia	1183
Duncan Canal, Alaska	1565-1571
Dungeness, Chile	7
Dungeness, Wash	973
Dutch Harbor, Alaska * (140)	2109
Duwamish Waterway, Wash	1025
Dyes Inlet, Wash	1033

E

	No.
Eagle Bay, Alaska	2123
Eagle Cliff, Wash	893
Eagle Harbor, Wash	1117
Eagle Point, Alaska	1491
East Foreland, Alaska	1921
East Island, Hawaiian Islands	2363
Echo Bay, Wash	1135
Ecuador	261-293
Edgerley Island, Calif	663
Edmonds, Wash	1015
Edna Bay, Alaska	1535
Eek Channel, Kuskokwim Bay, Alaska	2293
Eel River, Calif	785
Egegik, Alaska	2263
Egegik River, Alaska	2261,2263
Eklutna, Alaska	1929
El Capitan Island, Alaska	1525
El Capitan Passage	1551
El Salvador	363-367
El Segundo, Calif	441
Elbow Bay, Alaska	1441
Elbow Passage, Alaska	1739
Eld Inlet, Wash	1073
Eliza Harbor, Alaska	1617
Elkhorn, Calif	493

	No.
Elkhorn Slough, Calif.	489,497
Elkhorn Yacht Club, Calif.	487
Elk River, Calif.	794
Ellamar, Alaska	1855
Elliott Bay, Wash.	1023
Ellsworth, Wash.	913
Empire, Coos Bay, Oreg.	817
English Bay, Alaska	2107
Ensenada, Mexico	403
Ensenada Utria, Colombia	305
Entrance Island, Alaska	1593
Ernest Sound, Alaska	1411
Eshamy Bay, Alaska	1877
Esperanza Inlet, British Columbia	1235
Esquimalt, British Columbia	1151
Etienne Bay, Alaska	2251
Etolin Island, Alaska	1413,1423
Eureka, Calif.	796
Eureka Slough Bridge, Calif.	797
Evangelistas, Chile	71
Evans Island, Alaska	1843
Everett, Wash.	1081
Exchange Cove, Alaska	1421
Excursion Inlet, Alaska	1777
Explorer Bay, Alaska	2173
Eyak River, Alaska	1811

F

Fairway Island, Alaska	1735
Falcon Arm, Alaska	1737
False Pass, Alaska	2087
False River, Calif.	721
Farewell Harbor, British Columbia	1211
Favorite Bay, Alaska	1687
Fenimore Pass, Alaska	2177
Ferndale, Wash.	1137
Fidalgo Island, Wash.	1101
Fields Landing, Calif.	791
Filucy Bay, Wash.	1057
Finch Cove, Alaska	2161
Finger Bay, Alaska	2195
Finger Point, Alaska	1579
Finlayson Channel, B. C.	1261,1263
Fire Island, Alaska	1923
Fish Bay, Alaska	1721
Fisher Channel, British Columbia	1253
Fitzgibbon Cove, Alaska	1363
Fitz Hugh Sound, B. C.	1249,1251
Flaxman Island, Alaska	2351
Florence, Oreg.	829
Flynn Cove, Alaska	1775
Fords Cove, British Columbia	1325
Forrester Island, Alaska	1481
Fort Bragg Landing, Calif.	775
Fort Ross, Calif.	763
Fossil River, Alaska	2311
Fox Bay, Alaska Peninsula	2041
Fox Bay, Whale Island, Alaska	1957
Fraser River, British Columbia	1167
Frederick Sound, Alaska	1601-1619
French Frigate Shoals, Hawaiian Islands	2363
Freshwater Bay, Alaska	1691
Friday Harbor, Wash.	1133
Fritz Cove, Alaska	1645
Fulford Harbor, British Columbia	1157
Funter, Alaska	1649
Funter Bay, Alaska	1649

G

Galapagos Islands	281-293
Gallinas Creek, Calif.	651
Gambier Bay, Alaska	1625
Gardiner, Oreg.	823
Gardiner, Wash.	977
Gardner Canal, British Columbia	1271
Gareloi Island, Alaska	2227
Garibaldi, Oreg.	853
Gaviota, Calif.	455
General Fish Company Pier	484
Georgiana Slough, Calif.	713
Gertrude Cove, Alaska	2235
Gibbon Anchorage, Alaska	1839
Gig Harbor, Wash.	1041
Gilmer Bay, Alaska	1709
Glacier Bay, Alaska	1783-1789
Glacier Island, Alaska	1863
Glendale Cove, British Columbia	1209
Gnat Cove, Alaska	1345
Gold Street Bridge, Calif.	607
Goletas Channel, British Columbia	1219
Golfito, Costa Rica	339
Golfo de Ancud, Chile	117-123
Golfo Corcovado, Chile	103-115
Golfo Elena, Costa Rica	351
Golovnin Bay, Alaska	2341
Good Island, Alaska	1625
Goodnews Bay, Alaska	2289
Goose Island, Alaska	1771
Gooseneck Harbor, Alaska	1483
Gowlland Harbor, British Columbia	1191
Graham Island, British Columbia	1293-1297
Granite Cove, Alaska	1759
Granite Rock, Calif.	589
Grant Line Canal, Calif.	731
Grant Point, Alaska	2255
Gravel Point, Alaska	1817
Graves Harbor, Alaska	1791
Grayland, Wash.	935
Grays Harbor, Wash.	939-949
Great Sitkin Island, Alaska	2179,2181
Greely Point, Alaska	1639
Greenbank, Wash.	1090
Green Island, Alaska	1839
Grenville Channel, British Columbia	1273
Greys Island, Sumner Strait, Alaska	1575
Grief Island, Alaska	1569
Guadalupe Slough, Calif.	601
Guatemala	369,371
Guayaquil, Ecuador * (36)	265
Guaymas, Mexico * (60)	391
Guemes Channel, Wash.	1107
Gulf of Alaska	1791-1813
Gulf of California	387-397
Gulf of Esquibel, Alaska	1509-1513
Gusty Bay, Alaska	2217

H

Hadley, Alaska	1409
Haines, Alaska	1657
Hale Passage, Puget Sound	1045
Hale Passage, Wash.	1123
Haleiwa, Hawaii	2377
Haley Anchorage, Alaska	1721
Halibut Bay, Alaska	1323
Halibut Cove, Kachemak Bay, Alaska	1909
Hamilton Bay, Alaska	1597
Hana, Hawaii	2405
Hanalei Bay, Hawaii	2375
Hanamaulu Bay, Hawaii	2373
Hanapepe Bay, Hawaii	2369
Hanauma Bay, Hawaii	2383
Hanning Bay, Alaska	1835
Hansville, Wash.	1011
Haro Strait, Wash.	1141-1147
Harrington Point, Wash.	885

	No.
Hartley Bay, British Columbia	1267
Hassler Harbor, Alaska	1341
Hassler Island, Alaska	1369
Hawaii Island, Hawaii	2417-2427
Hawaiian Islands	2357-2429
Hawkins Island, Alaska	1823
Haystack Island, British Columbia	1315
Heceta Island, Alaska	1515
Henderson Inlet, Wash	1059
Herbert Island, Alaska	2153
Hercules, Calif	643
Herschel Island, Arctic Ocean	2353
Hetta Inlet, Alaska	1449-1453
Hill Island, Alaska	1743
Hilo, Hawaii	2427
Hinchinbrook Island, Alaska	1827,1829
Hobart Bay, Alaska	1623
Hogg Bay, Alaska	1881
Hog Island, San Antonio Creek, Calif	653
Holbrook, Alaska	1533
Holkham Bay, Alaska	1633
Hollis Anchorage, Alaska	1407
Holly Farms Harbor, Wash	1089
Holt, Whiskey Slough, Calif	727
Holtz Bay, Alaska	2247
Homer, Alaska	1910
Home, Wash	1047
Honduras	361
Honolulu, Hawaii * (164)	2381
Honuapo, Hawaii	2425
Hood Canal, Wash	997-1009
Hookton Slough, Calif	793
Hoonah Harbor, Alaska	1779
Hot Springs Bay, Alaska	2219
Howe Sound, British Columbia	1173
Huacho, Peru	241
Huasco, Chile	195
Humboldt Bay, Calif * (76)	789
Humboldt Bay, Calif	787-801
Hungry Harbor, Wash	871
Hunter Bay, Alaska	1437
Hunters Point, Calif	541
Hyde Point, Wash	1053

I

Icy Bay, Alaska	1803
Icy Strait, Alaska	1767-1789
Idaho Inlet, Alaska	1767
Ideal Cove, Mitkof Island, Alaska	1605
Ikatan Bay, Alaska	2085
Iliamna Bay, Alaska	1939
Iio, Peru	231
Ilwaco, Wash	867
Inanudak Bay, Alaska	2139
Inian Cove, Alaska	1763
Ingraham Bay, Alaska	1383
Inverness, Calif	759
Iquique, Chile	223
Irish Landing, Calif	723
Isanotski Strait, Alaska	2087
Isla Cebaco, Panama	331
Isla del Rey, Panama	317
Isla Diego Ramirez, Chile	63
Isla Guadalupe, Mexico	401
Isla Guafo, Chile	101
Isla Guamblin, Chile	99
Isla Isabela, Galapagos Islands	285-289
Isla Noir, Chile	67
Isla Parida, Panama	335
Isla San Cristobal, Galapagos Islands	281
Isla Santa Maria, Chile	149
Isla Santa Maria, Galapagos Islands	283
Isla Socorro, Mexico	383
Islas Week, Chile	69
Islote Pollo, Chile	49
Izembek Lagoon, Alaska	2255
Izhut Bay, Alaska	1953

J

Jack Bay, Alaska	1859
Jackson Cove, Alaska	1863
Jap Bay, Alaska	1979
Johnston Island, Hawaiian Islands	2429
Johnston Passage, Alaska	1800
Johnstone Point, Alaska	1827
Johnstone Strait, B. C.	1197,1201-1205
Joice Island, Calif	681
Juneau, Alaska * (112)	1643

K

Kachemak Bay, Alaska	1906-1911
Kagalaska Island, Alaska	2187,2189
Kah Shakes Cove, Alaska	1333
Kahoolawe Island, Hawaii	2413,2415
Kahului, Hawaii	2403
Kaigani Harbor, Alaska	1455
Kaigani Strait, Alaska	1455,1457
Kailua Kona, Hawaii	2421
Kake, Keku Strait, Alaska	1599
Kakul Narrows, Alaska	1719
Kalama, Wash	899
Kamalo Harbor, Hawaii	2397
Kamishak Bay, Alaska	1941
Kanaga Bay, Alaska	2213
Kanaga Island, Alaska	2209-2215
Kanaka Bay, Wash	1141
Kanatak Lagoon, Alaska	2029
Kaneohe Bay, Hawaii	2389
Karheen, Alaska	1517
Karta Bay, Alaska	1405
Kasaan, Alaska	1403
Kassan Bay, Alaska	1397-1407
Kashega Bay, Alaska	2117
Kasnyku Bay, Alaska	1681
Kasook Inlet, Alaska	1461
Kassa Inlet, Alaska	1439
Katmai Bay, Alaska	2025
Kauai Island, Hawaii	2367-2375
Kaumalapau, Hawaii	2401
Kaunakakai, Hawaii	2395
Kawaihae, Hawaii	2419
Kawanak Pass, Alaska	2331
Kayak Point, Wash	1085
Kazakof Bay, Alaska	1955
Kealakekua Bay, Hawaii	2423
Keete Inlet, Alaska	1447
Keete Island, Alaska	1445
Keku Strait, Alaska	1585-1599
Kell Bay, Alaska	1543
Kelley Point, Oreg	905
Kelp Island Passage, Alaska	1305
Kelsey Bay, British Columbia	1201
Kemano Bay, British Columbia	1271
Kenai City Pier, Alaska	1917
Kenai Peninsula, Alaska	1883-1899
Kenai River, Alaska	1915
Kernville, Oreg	847
Ketchikan, Alaska * (108)	1349
Kigul Island, Alaska	2149
Kihei, Hawaii	2409
Killisnoo, Alaska	1685
Kimshan Cove, Alaska	1741
King Cove, Alaska	2071
Kings Bay, Alaska	1867
Kirby Park, Calif	495

	No.
Kiska Harbor, Alaska	2237
Kiska Island, Alaska	2235,2237
Kisselen Bay, Alaska	2133
Kitimat, British Columbia	1269
Kiwalik, Alaska	2347
Kizhuyak Bay, Alaska	1959
Kizhuyak Point, Alaska	1961
Klag Bay, Alaska	1739
Klaskish Inlet, British Columbia	1241
Klemtu Passage, British Columbia	1261
Klokachef Island, Alaska	1715
Knapp Landing, Wash	903
Knappa, Oreg	882
Knight Inlet, British Columbia	1209
Knight Island, Alaska	1845,1847
Knight Island Passage, Alaska	1877
Knik Arm, Alaska	1927,1929
Knox Bay, British Columbia	1199
Kodiak, Alaska * (140)	1967
Kodiak Harbor, Alaska	1967
Kodiak Island, Alaska	1943-2021
Kokechik Bay, Alaska	2323
Kokinhenik Island, Alaska	1807
Kolo, Hawaii	2393
Kootznahoo Inlet, Alaska	1687,1689
Korovin Bay, Alaska	2163
Korovin Island, Alaska	2045
Kosciusko Island, Alaska	1533,1539,1549
Kotzebue Sound, Alaska	2347
Kruzof Island, Alaska	1707,1709
Kuheia Bay, Hawaii	2413
Kuiu Island, Alaska	Page 180
Kukak, Alaska	2023
Kukak Bay, Alaska	2023
Kulilak Bay, Alaska	2121
Kulak Bay, Alaska	2191-2195
Kumeon Bay, British Columbia	1319
Kupreanof Harbor, Alaska	2039
Kupreanof Island, Alaska	1567,1597,1611
Kupreanof Strait, Alaska	2005-2011
Kuskokwak Creek, Alaska	2297
Kuskokwim Bay, Alaska	2289-2303
Kvichak, Alaska	2277
Kvichak Bay, Alaska	2265-2279
Kvichak River, Alaska	2275-2279
Kwikluak Pass, Alaska	2329
Kyuquot Sound, British Columbia	1237

L

La Conner, Wash	1093
La Jolla, Calif	417
La Libertad, Ecuador	267
La Libertad, El Salvador	365
La Paz, Mexico	397
La Push, Wash	957
La Union, El Salvador * (52)	363
Ladysmith, British Columbia	1165
Lahaina, Hawaii	2411
Laie Bay, Hawaii	2391
Lake Bay, Alaska	1417
Lakeville, Calif	647
Lama Passage, British Columbia	1255
Lanai Island, Hawaii	2401
Lancaster Cove, Alaska	1393
Landlocked Bay, Alaska	1853
Larsen Bay, Alaska	1991
Lash Bay, Alaska	2223
Laska Cove, Alaska	2189
Latouche, Alaska	1841
Laysan Island, Hawaiian Islands	2361
Lazy Bay, Alaska	1983
Lees Cabins, Alaska	2031
Lemesurier Island Light, Alaska	1769
Lenard Harbor, Alaska	2073
Level Islands, Alaska	1563
Levelock, Alaska	2279
Liberty Bay, Wash	1019
Liesnoi Island, Alaska	1617
Lindenburg Head, Alaska	1733
Lindenburg Peninsula, Alaska	1579
Lisianski Inlet, Alaska	1749
Lisianski Island, Hawaiian Islands	2359
Lisianski Peninsula, Alaska	1703
Lisianski Strait, Alaska	1745,1747
Little River Harbor, Calif	771
Lituya Bay, Alaska	1795
Llico, Chile	163
Long Bay Entrance, Alaska	1871
Long Beach, Calif	429-433
Long Beach, Wash	919
Longbranch, Wash	1057
Longview, Wash	897
Lopez Island, Wash	1103,1127,1131
Loring, Alaska	1379
Los Angeles, Calif * (68)	437
Los Angeles, Calif	439
Los Negritos, Colombia	299
Los Patos, Calif	427
Los Vilos, Chile	185
Lowe Inlet, British Columbia	1273
Lyman Anchorage, Alaska	1409
Lynn Canal, Alaska	1649-1659

M

Maalaea Bay, Hawaii	2409
Mabel Island, Alaska	1443
Macleod Harbor, Alaska	1833
McFarland Islands, Alaska	1463
Mackenzie Bay, Alaska	2353,2355
McNeil Island, Wash	1053
McPherson Passage, Alaska	1865
Magellan Strait	7-55
Mahukona, Hawaii	2417
Makena, Hawaii	2407
Maknik Lagoon, Alaska	2319
Malaspina Strait, British Columbia	1177
Malga Bay, Alaska	2105
Malina Bay, Alaska	2015
Mallard Island Ferry Wharf, Calif	697
Mansfield Peninsula, Alaska	1651
Manzanillo, Mexico	379
Marble Island, Alaska	1531
Marble Passage, Alaska	1529
Mare Island	659
Mare Island Strait, Calif	661
Markham, Wash	943
Marmot Bay, Alaska	1955
Marmot Island, Alaska	1951
Marmot Strait, Alaska	1951
Marrowstone Island, Wash	991
Marrowstone Point, Wash	989
Marshall, Calif	757
Martin Harbor, Alaska	2163
Mary Island, Alaska	1337
Massacre Bay, Alaska * (152)	2243
Masset Harbor, British Columbia	1297
Matarani, Peru * (24)	233
Maui Island, Hawaii	2403-2411
Maullin, Chile	133
Mayne Island, British Columbia	1159
Mazatlan, Mexico	385
Meares Island, Alaska	1493
Meares Passage, Alaska	1489-1493
Meins Landing, Calif	691
Mejillones del Sur, Chile	215
Mendocino, Calif	773

	No.
Mendocino Bay, Calif.	773
Menefee Anchorage, Alaska	1385
Metlakatla, Alaska	1389
Mexico	373-403
Miami Cove, Oreg.	855
Middle Bluff, Alaska	2265
Middle River, Calif.	729
Middleton Island, Alaska	1813
Midway Islands, Hawaiian Islands	2357
Milbanke Sound, British Columbia	1257
Mill Bay, British Columbia	1321
Miner Island, Alaska	1749
Mining Camp, Alaska	1993
Minnie Bay, Alaska	1433
Mist Harbor, Alaska	2049
Mitchell Bay, Alaska	1689
Mitkof Island, Alaska	1603
Moghoweyik River, Alaska	2315
Moira Sound, Alaska	1387
Mokelumne River, Calif.	713-717
Moku o Loe, Hawaii	2387
Molokai Island, Hawaii	2393-2399
Montague Island, Alaska	1831-1837
Monte Carlo Island, Alaska	1585
Monterey, Calif.	483
Monterey Bay, Calif.	483,499
Montesano, Wash.	949
Montezuma Slough, Calif.	687,691-693
Mop Point, Alaska	1339
Morakas Point, Alaska	2269
Morro Beach, Calif.	477
Morse Cove, Alaska	1331
Morzhovoi Bay, Alaska	2077
Moser Bay, Alaska	1985
Moss Landing, Calif.	485
Mowry Slough, Calif.	595
Mud Bay, Alaska	1763
Mud Bay, Cordova Bay, Alaska	1449
Mud Slough, Calif.	599
Mugu Lagoon, Calif.	445
Muir Inlet, Alaska	1787
Mukilteo, Wash.	1079
Mystery Bay, Wash.	991

N

Nachalni Island, Alaska	2009
Nagai Island, Alaska	2047-2049
Naha Bay, Alaska	1379
Nahcotta, Wash.	923
Nakat Harbor, Alaska	1313
Naked Island, Alaska	1865
Nakeen, Alaska	2275
Naknek Air Base, Alaska	2273
Naknek River, Alaska	2267-2273
Namu Harbor, British Columbia	1249
Nanaimo, British Columbia	1175
Naos Island, Panama	323
Napa, Napa River, Calif.	667
Napa River, Calif.	663-667
Napoopoo, Hawaii	2423
Nasparti Inlet, British Columbia	1239
Nass River, British Columbia	1321
Natalia Point, Alaska	1473
National City, Calif.	411
Naval Weapon Station, Calif.	685
Nawiliwili Bay, Hawaii	2371
Nazan Bay, Alaska	2165
Neah Bay, Wash.	963
Nehalem, Oreg.	863
Nehalem River, Oreg.	861,863
Nehenta Bay, Alaska	1391
Nestucca Bay, Oreg.	849
Neva Strait, Alaska	1711,1713
New Hope Bridge, Calif.	717
New York Slough, Calif.	723
Newark Slough, Calif.	583
Newport, Oreg.	835
Newport Bay Entrance, Calif.	421
Niblack Anchorage, Alaska	1387
Nicaragua	355-359
Nichols Bay, Alaska	1301
Nigelius Point, Alaska	1347
Niihau Island, Hawaii	2365
Nikishka, Alaska * (132)	1919
Ninilchik, Alaska	1914
Nismeni Cove, Alaska	1729
Nisqually Reach, Wash.	1055
Niyrakpak Lagoon, Alaska	2313
Nome, Alaska	2343
Nonopapa, Hawaii	2365
Nootka Sound, British Columbia	1233
Nordyke Island, Alaska	1941
North Bay, Norton Sound, Alaska	2339
North Bentinck Arm, British Columbia	1259
Northeast Arm, Alaska	1999
Northeast Cape, Alaska	2309
North Foreland, Alaska	1931
North Inian Pass, Alaska	1763
North Pass, Tlevak Strait, Alaska	1471
Norton Sound, Alaska	2333-2343
Noyes Island, Alaska	1509
Noyo River, Calif.	777
Nuka Bay, Alaska	1893
Nuka Passage, Alaska	1895
Nunivak Island, Alaska	2321
Nushagak Bay, Alaska	2281-2287
Nushagak Bay, Alaska * (156)	2283

O

Oahu Island, Hawaii	2377-2391
Oak Bay, Wash.	995
Oakland, Calif.	523-527,531,533
Oakland Airport, Calif.	537
Oakland Bay, Wash.	1069
Ocean Beach, Calif.	509
Ocean Falls, British Columbia	1253
Ogden Passage, Alaska	1741
Ogliuga Island, Alaska	2225
Oil Bay, Alaska	1938
Okee Bay, Alaska	2141
Olga Bay, Alaska	1987
Olga Point, Alaska	1705
Olga Strait, Alaska	1705
Olive Cove, Alaska	1425
Olympia, Wash.	1077
Omakstalia Point, Alaska	2271
Onion Bay, Alaska	2005
Orca, Alaska	1821
Orca Inlet, Alaska	1815-1821
Orcas Island, Wash.	1125,1129
Orcas, Wash.	1129
Oregon	807-917
Orwood, Old River, Calif.	725
Otkriti Bay, Alaska	2241
Otter Point, Alaska	2137
Ouzinkie, Alaska	1963
Owen Bay, British Columbia	1195
Oyster Point Marina, Calif.	549

P

Pacific Beach, Wash.	951
Pacific Mariculture Dock, Calif.	491
Padilla Bay, Wash.	1109
Paita, Peru	253
Palix River, Wash.	927

	No.
Palo Alto Marker #8, Calif.	591
Palo Alto Yacht Harbor, Calif.	593
Panama	313-337
Paposo, Chile	209
Papudo, Chile	181
Parry Passage, British Columbia	1293
Paso Goree, Chile	57
Paso Lagartija, Chile	121
Paso Tautil, Chile	123
Passage Canal, Alaska	1873
Patos Island Wharf, Wash.	1147
Patton Bay, Alaska	1831
Paul Island, Alaska	2039
Pavlof Bay, Alaska	2067,2069
Pearse Canal, Alaska	1317
Peavine Pass, Wash.	1115
Pender Harbor, British Columbia	1177
Perenosa Bay, Alaska	1945
Peril Strait, Alaska	1719-1735
Peru	231-259
Petaluma River, Calif.	645-649
Pete Dahl Slough, Alaska	1809
Petersburg, Alaska	1583
Peterson Bay, Alaska	2079
Pichidangui, Chile	183
Pickering Passage, Wash.	1065,1067
Picnic Harbor, Alaska	1899
Pierce Harbor, Calif.	679
Pikmiktalik River, Alaska	2335
Pinole Point, Calif.	641
Pirate Cove, Alaska	2051
Pisagua, Chile	227
Pisco, Peru	237
Pittsburg, Calif.	699
Pleasant Beach, Wash.	1029
Pleasant Harbor, Wash.	1007
Pogibshi Point, Alaska	1727
Point Adams, Oreg.	873
Point Adolphus, Alaska	1773
Point Arena, Calif.	767
Point Arguello, Calif.	473
Point Barrow, Alaska	2349
Point Bonita, Calif.	511
Point Buckler, Calif.	695
Point Chauncey, Calif.	623
Point Chehalis, Wash.	939
Point Elizabeth, Alaska	1731
Point Grenville, Wash.	953
Point Isabel, Calif.	627
Point Lavinia, Alaska	1765
Point Latouche,Alaska	1802
Point Lockwood, Alaska	1577
Point Loma, Calif.	405
Point Migley, Wash.	1123
Point No Point, Wash.	1013
Point Orient, Calif.	633
Point Partridge, Wash.	981
Point Reyes, Calif.	751
Point St. Albans, Alaska	1545
Point San Bruno, Calif.	551
Point San Pedro, Calif.	639
Point San Quentin, Calif.	637
Point Thatcher, Alaska	1683
Pole Anchorage, Alaska	1539
Polk Inlet, Alaska	1401
Popof Island, Alaska	2051,2053
Popokamute, Alaska	2299
Porcher Island, British Columbia	1281
Port Alberni, British Columbia	1227
Port Alexander, Alaska	1661
Port Alice, Alaska	1515
Port Allen, Hawaii	2369
Port Althorp, Alaska	1761
Port Angeles, Wash.	971
Port Audrey, Alaska	1847
Port Bainbridge, Alaska	1881
Port Banks, Alaska	1697
Port Beauclerc, Alaska	1553
Port Blackney, British Columbia	1257
Port Blakely, Wash.	1027
Port Camden, Alaska	1595
Port Canaveral, British Columbia	1277
Port Chalmers, Alaska	1837
Port Chatham, Alaska	1903
Port Chester, Alaska	1389
Port Clarence, Alaska	2345
Port Conclusion, Alaska	1663
Port Dick, Alaska	1897
Port Etches, Alaska	1829
Port Fidalgo, Alaska	1851,1853
Port Frederick, Alaska	1779
Port Gamble, Wash.	999
Port Graham, Alaska	1905
Port Gravina, Alaska	1825
Port Hardy, British Columbia	1217
Port Harvey, British Columbia	1205
Port Heiden, Alaska	2259
Port Hobron, Alaska	1975
Port Houghton, Alaska	1621
Port Hueneme, Calif.	447
Port Ludlow, Wash.	997
Port McArthur, Alaska	1541
Port Madison, Wash.	1017
Port Malmesbury, Alaska	1669
Port Moller, Alaska	2257
Port Neville, British Columbia	1203
Port Orchard, Wash.	1021,1031
Port Orford, Oreg.	811
Port Protection, Alaska	1555
Port San Juan, British Columbia	1221
Port San Luis Wharf, Calif.	475
Port Santa Cruz, Alaska	1501
Port Simpson, British Columbia	1287
Port Snettisham, Alaska	1635
Port Stephens, British Columbia	1275
Port Susan, Wash.	1083-1087
Port Tongass, Alaska	1311
Port Townsend, Wash * (92)	985
Port Townsend (Point Hudson)	987
Port Valdez, Alaska	1861
Port Walter, Alaska	1665
Portage Bay, Alaska	1611,2029
Portland, Oreg.	909
Portland Canal	1323-1329
Possession Sound, Wash.	1079,1081
Potrero Point, Calif.	539
Poulsbo, Wash.	1019
Povorotni Island, Alaska	1727
Powooiliak Point, Alaska	2317
Prince of Wales I.	1383,1385,1415,1555,1561
Prince Rupert, British Columbia	1245-1291
Prince Rupert, Chatham Sound	1285
Prince William Sound, Alaska	1815-1881
Princeton Halfmoon Bay, Calif.	503
Principe Channel, British Columbia	1275-1279
Prisoners Harbor, Calif.	467
Prisoners Point, Calif.	705
Protection Point, Alaska	2281
Puale Bay, Alaska	2027
Puerto Americano, Chile	97
Puerto Angel, Mexico	373
Puerto Angosto, Chile	43
Puerto Armuelles, Panama	337
Puerto Barbara, Chile	79
Puerto Barroso, Chile	81
Puerto Bolivar, Ecuador	261
Puerto Chicama, Peru	247
Puerto de Cayo, Ecuador	269

	No.
Puerto de San Jose, Guatemala	369
Puerto del Hambre, Chile	27
Puerto Flamenco, Chile	203
Puerto Gallant, Chile	35
Puerto Henry, Chile	75
Puerto Herradura, Costa Rica	345
Puerto Italiano, Chile	93
Puerto Lagunas, Chile	95
Puerto Lebu, Chile	145
Puerto Low, Chile	103
Puerto Melinka, Chile	105
Puerto Montt, Chile * (12)	125
Puerto Penasco, Mexico	389
Puerto Queilen, Chile	113
Puerto Quellon, Chile	111
Puerto Quemchi, Chile	117
Puerto Refugio, Chile	87
Puerto San Antonio, Chile	29
Puerto San Juan, Peru	235
Puerto San Pedro, Chile	109
Puerto Slight, Chile	83
Puerto Somoza, Nicaragua	355
Puerto Tamar, Chile	47
Puerto Vallarta, Mexico	381
Puerto Yana, Chile	147
Puerto Yates, Chile	89
Puerto Zenteno, Chile	21
Puget Sound, Wash	1011-1077
Pukoo Harbor, Hawaii	2399
Puna, Ecuador	263
Punta Ancud, Chile	51
Punta Arenas, Chile * (8)	25
Punta Catalina, Chile	9
Punta Eten, Peru	249
Punta Garachine, Panama	315
Punta Mala, Panama	329
Puntarenas, Costa Rica * (48)	347
Pybus Bay, Alaska	1615
Pyramid Harbor, Alaska	1655

Q

Qlawdzeet Anchorage, British Columbia	1283
Quartermaster Harbor, Wash	1039
Quatsino Sound, British Columbia	1243
Queen Charlotte Islands, B. C.	1289,1291
Queule, Chile	139
Quepos, Costa Rica	343
Quillayute River, Wash	957
Quintero, Chile	177
Quivira Basin, Mission Bay, Calif	413

R

Rada Pichilemu, Chile	165
Rada Quintay, Chile	173
Rada Topocalma, Chile	167
Rada Vallenar, Chile	91
Raspberry Strait, Alaska	2013
Rasp Ledge, Alaska	1629
Rat Islands, Alaska	2231-2237
Ratz Harbor, Alaska	1415
Raven Bay, Alaska	2125
Ravenwood Slough, Calif	587
Raymond, Wash	933
Red Bay, Alaska	1561
Red Bluff Bay, Alaska	1673
Redfield Cove, Alaska	1801
Redfox Bay, Alaska	2017
Redonda Bay, British Columbia	1185
Redwood City, Calif	577
Redwood Creek entrance, Calif	571
Redwood Creek Marker #8, Calif	569
Reedsport, Oreg	825
Reid Bay, Sumner Strait, Alaska	1557
Reservation Bay, Wash	1101
Resurrection Bay, Alaska	1885
Revillagigedo Channel, Alaska	1331-1345
Rich Passage, Wash	1029
Richardson, Wash	1131
Richmond, Calif	629
Riley Cove, British Columbia	1231
Rincon Island, Calif	451
Rincon Point, Calif	519
Rio Chepo, Panama	319
Rio Chone, Ecuador	273
Rio Imperial, Chile	141
Rio San Juan, Colombia	301
Rio Santiago, Ecuador	277
Rio Vista, Calif	737
Rivers Inlet, British Columbia	1247
Robert Islands, Alaska	1621
Roberts Landing, Calif	545
Roca Remolinos, Chile	127
Roche Harbor, Wash	1143
Rocky Bay, Alaska	1899
Rocky Point, Alaska	1857
Rocky Point, Wash	1073
Rogue River, Oreg	809
Root Point, British Columbia	1207
Rosario, Wash	1125
Rosario Strait, Wash	Page 176
Rose Inlet, Alaska	1459
Rudyerd Bay, Alaska	1361

S

Sacramento, Calif	745
Sacramento River, Calif	733-745
Sadie Cove, Katchemak Bay, Alaska	1908
Sagchudak Island, Alaska	2171
Saginaw Bay, Alaska	1619
St. Catherine Cove, Alaska	2089
St. George Island, Alaska	2304
Saint Helens, Oreg	901
St. John Harbor, Alaska	1573
St. Johns, Oreg	907
St. Lawrence Island, Alaska	2309-2319
St. Matthew Island, Alaska	2307
St. Michael, Alaska * (160)	2337
St. Paul Harbor, Alaska	1969
St. Paul Island, Alaska	2305
Sakie Bay, Alaska	1485
Salina Cruz, Mexico * (56)	375
Salisbury Sound, Alaska	1715,1717
Saltery Cove, Alaska	1399
Saltery Point, Alaska	1469
Samoa, Calif	799
San Antonio, Chile	169
San Carlos, Mexico	399
San Clemente, Calif	419
San Clemente Island, Calif	457
San Diego, Calif * (64)	409
San Diego, Calif	407
San Diego Bay, Calif	407-411
San Fernando Island, Alaska	1507
San Francisco Bar, Calif	507
San Francisco Bay, Calif	511-637
San Francisco (Golden Gate), Calif	513
San Francisco, North Point, Calif	517
San Joaquin River, Calif	701-731
San Juan Channel, Wash	1131,1133
San Juan Island, Wash	1133,1141,1143
San Juan del Sur, Nicaragua	357
San Leandro Channel, Calif	543
San Lorenzo, Ecuador	279
San Luis Obispo Bay, Calif	475
San Mateo Bridge, Calif	557,559

	No.
San Nicolas Island, Calif.	465
San Pablo Bay, Calif.	639-657
San Pedro Channel, Calif.	421-443
San Simeon, Calif.	479
Sanak Harbor, Alaska	2081
Sanak Islands, Alaska	2079,2081
Sanborn Harbor, Alaska	2047
Sand Bay, Alaska	2181
Sand Heads, British Columbia	1167
Sand Mound Slough, Calif.	723
Sand Point, Alaska	2053
Sandy Point, Wash.	1088
Santa Ana River, Calif.	425
Santa Barbara, Calif.	453
Santa Barbara Channel, Calif.	445-455
Santa Barbara Island, Calif.	463
Santa Barbara Islands, Calif.	457-471
Santa Cruz, Calif.	499
Santa Cruz Island, Calif.	467
Santa Monica Bay, Calif.	441,443
Santa Monica, Calif.	443
Saratoga Passage, Wash.	1089,1091
Sausalito, Calif.	615,617
Sawmill Bay, Alaska	1843
Scraggy Point, Alaska	1717
Scotch Cap, Alaska	2095
Sea Otter Harbor, Alaska	1487
Sea Otter Sound, Alaska	1517,1527
Seabeck, Wash.	1005
Seal Bay, Alaska	1947
Seal Cape, Alaska	2061
Seaplane Harbor, Calif.	553
Seattle, Wash * (96)	1023,1025
Seclusion Harbor, Alaska	1587
Security Bay, Alaska	1675
Security Cove, Alaska	1479
Sedanka Island, Alaska	2129
Seguam Island, Alaska	2161
Segunda Angostura, Chile	19
Selby, Calif.	669
Seldovia, Alaska * (128)	1907
Semiahmoo Bay, Wash.	1139
Sequalitchew Creek, Wash.	1055
Sequim Bay, Wash.	975
Sergius Narrows, Alaska	1723
Settlement Point, Alaska	2067
Settlers Point, Oreg.	883
Seward, Alaska	1885
Seymour Canal, Alaska	1629,1631
Seymour Narrows, British Columbia	1193
Shag Rock, Alaska	1815
Shakan Strait, Alaska	1549
Shakan Bay Entrance, Alaska	1547
Shelter Cove, Calif.	781
Shelton, Wash.	1069
Shemya Island, Alaska	2239
Shoal Point, Alaska	2209
Shoals Point, Alaska	1707
Shoalwater Pass, Alaska	1357
Shrimp Bay, Alaska	1373
Shumagin Islands, Alaska	2045-2055
Shushartie Bay, British Columbia	1219
Shuyak Island, Alaska	1943,2019,2021
Shuyak Strait, Alaska	2017
Sidney, British Columbia	1155
Siletz Bay, Oreg.	845
Siletz River, Oreg.	847
Sitka, Alaska * (116)	1701
Sitka Sound, Alaska	1699-1705
Sitkalidak Island, Alaska	1975
Sitkinak Lagoon, Alaska	1981
Siuslaw River, Oreg.	827,829
Skagit Bay, Wash.	1093-1099
Skagway, Alaska	1659
Skamokawa, Wash.	887
Skan Bay, Alaska	2115
Skidegate Inlet, British Columbia	1289
Skowl Arm, Alaska	1399
Slingsby Channel, British Columbia	1245
Slocum Arm, Alaska	1737
Smeaton Bay, Alaska	1355
Smith Island, Alaska	1849
Smith Island, Wash.	979
Smith Slough, Calif.	581
Smuggler Cove, Hawaii	2415
Snag Point, Alaska	2285
Snodgrass Slough, Calif.	741
Snug Corner Cove, Alaska	1851
Snug Harbor, Alaska	1845,1937
Soda Bay, Alaska	1475
Sonoma Creek, Calif.	655,657
Sooke, British Columbia	1149
South Bay Wreck, Calif.	573
South Bend, Wash.	931
South Bight, Alaska	2231
South Colby, Wash.	1035
South Inian Pass, Alaska	1765
South Pass, Sukkwan Strait, Alaska	1467
South San Francisco, Calif.	547
Southbeach, Oreg.	837
Southeast Farallon Island, Calif.	505
Spruce Island, Alaska	1963,1965
Squamish, British Columbia	1173
Stag Bay, Alaska	1747
Stanwood, Wash.	1087
Steamboat Bay, Alaska	1509
Steamboat Slough, Calif.	739
Steamer Bay, Alaska	1423
Steilacoom, Wash.	1051
Stella, Wash.	895
Steller Cove, Alaska	2249
Stephens Passage, Alaska	1621-1647
Stepovak Bay, Alaska	2043
Stewart, British Columbia	1329
Stikine River, Alaska	1431
Stillaguamish River, Wash.	1087
Stockton, Calif.	711
Strait of Georgia, Wash.	1135,1139
Strait of Juan de Fuca, Wash.	961-981
Strawberry Bay, Wash.	1113
Stuart Island, Alaska	2339
Stuart Island, Wash.	1145
Suemez Island, Alaska	1501
Suisun Bay, Calif.	677-699
Suisun City, Calif.	683
Suisun Point, Calif.	675
Suisun Slough entrance, Calif.	677
Sukkwan Island, Alaska	1461
Sulzer, Alaska	1453
Sumner Island, Alaska	1559
Sumner Strait, Alaska	1537-1575
Sunrise, Alaska	1925
Surge Bay, Alaska	1753
Swanson Harbor, Alaska	1781
Sweeper Cove, Alaska * (148)	2193
Swinomish Channel, Wash.	1093,1109
Symonds Bay, Alaska	1699

T

Table Bay, Alaska	1667
Taboga, Panama	325
Tachikuga Bay, Alaska	2321
Tacoma, Wash.	1043
Taft, Oreg.	845
Tah Bay, Alaska	1435
Takanis Bay, Alaska	1751
Takoma Cove, Alaska	1897

	No.
Taku Harbor, Alaska	1637
Taku Inlet, Alaska	1639,1641
Talara, Peru * (32)	255
Talcahuano, Chile	153
Taltal, Chile	207
Tamgas Harbor, Alaska	1381
Tanaga Bay, Alaska	2221
Tanaga Island, Alaska	2217-2223
Tanager Point, Alaska	2183
Tarlatt Slough, Wash	925
Tasu Sound, B. C	1291
Tatitlek Narrows, Alaska	1855
Tatoosh Island, Wash	961
Tebenkof Bay, Alaska	1671
Tenakee Inlet, Alaska	1693
Tenakee Springs, Alaska	1693
Tepoca Bay, Mexico	393
Terminous, Calif	715
Thatcher Pass, Wash	1111
The Summit, Alaska	1591
Thomas Bay, Alaska	1609
Thorne Island, Alaska	1419
Three Arm Bay, Alaska	2203
Threemile Slough entrance, Calif	703,735
Three Saints Bay, Alaska	1977
Three Star Point, Alaska	2035
Tierra del Fuego	1-5
Tigalda Bay, Alaska	2097
Tigalda Island, Alaska	2097
Tillamook, Oreg	859
Tillamook Bay, Oreg	851-859
Tlevak Narrows, Alaska	1477
Tlevak Strait, Alaska	1459-1477
Tocopilla, Chile	219
Toke Point, Wash	929
Toledo, Oreg	843
Tomales Bay, Calif	753
Tongass Island, Alaska	1311
Tongass Narrows, Alaska	1349,1351
Tonki Bay, Alaska	1949
Tonowek Bay, Alaska	1513
Topolobampo, Mexico	387
Totten Inlet, Wash	1071
Tracyton, Wash	1033
Traitors Cove, Alaska	1375,1377
Treadwell Bay, British Columbia	1245
Trident Bay, Alaska	2099
Trinidad Harbor, Calif	803
Tuktoyaktuk, Arctic Ocean	2355
Tulalip, Wash	1083
Tumaco, Colombia	295
Turn Island, B. C	1197
Turn Point, Wash	1145
Turnagain Arm, Alaska	1925
Tutka Bay, Alaska	1906
Tuxedni Channel, Alaska	1935
Tuxekan Passage, Alaska	1519-1523
Twin Rivers, Wash	967
Two Arm Bay, Alaska	1889
Tyndall Glacier, Alaska	1804

U

Udagak Strait, Alaska	2131
Udamat Bay, Alaska	2129
Ugak Bay, Alaska	1973
Uganik Bay, Alaska	1997-2001
Uganik Passage, Alaska	2001
Ukolnoi Island, Alaska	2063
Ulak Island, Alaska	2229
Ulloa Channel	1495-1499
Ulloa Island, Alaska	1495
Umnak Island, Alaska	2137-2149
Umpqua River, Oreg	821-825
Unalaska, Alaska * (144)	2111
Unalaska Island, Alaska	2107-2133
Unalga Bight, Alaska	2205
Unalga Island, Alaska	2105
Unga Island, Alaska	2055
Unimak Island, Alaska	2083-2095
Union, Wash	1009
Union Bay, Alaska	1411
Upper Guadalupe Slough, Calif	603
Upright Head, Wash	1127
Ushagat Island, Alaska	1901
Usof Bay, Alaska	2127
Uyak, Alaska	1989
Uyak Bay, Alaska	1989-1995
Uzkosti Point, Alaska	2011

V

Valdez, Alaska * (124)	1861
Valdez Arm, Alaska	1855-1861
Valdivia, Chile	137
Vallenar Point, Alaska	1359
Valparaiso, Chile * (16)	175
Vancouver, British Columbia * (104)	1171
Vancouver, Wash	911
Vancouver Island	1149-1243
Vaughn, Wash	1061
Ventura, Calif	449
Victoria, British Columbia * (100)	1153
Viekoda Bay, Alaska	2003
View Cove, Alaska	1465
Village Cove, Alaska	2305
Village Islands, Alaska	1997
Village Point, Wash	1124

W

Waddington Harbor, British Columbia	1189
Wadhams, British Columbia	1247
Waialula Bay, Hawaii	2377
Waianae, Hawaii	2379
Waikane, Hawaii	2389
Waimanalo, Hawaii	2385
Waimea Bay, Hawaii	2367
Waldport, Oreg	831
Wales Island, Alaska	1317
Walkers Landing, Wash	1065
Walrus Islands, Alaska	2287
Ward Cove, Alaska	1351
Wards Island, Calif	707
Warehouse Creek, Alaska	2295
Warm Chuck Inlet, Alaska	1513
Warm Spring Bay, Alaska	1677
Warrendale, Oreg	917
Warrenton, Oreg	875
Washington	865-1147
Washougal, Wash	915
Waterfall Cannery, Alaska	1497
Wauna, Oreg	891
Wauna, Wash	1049
Wedderburn, Oreg	809
Wells Passage, Alaska	1869
West Point Slough, Calif	579
Westport, Calif	779
Westport, Wash	937
West Thurlow Island, B. C	1199
Whale Bay, Alaska	1697
Whale Channel, British Columbia	1265
Whale Island, Alaska	1957
Whale Passage, Alaska	1419
Whaletown, British Columbia	1181
Whidbey Island, Wash	1090,1091
Whiskey Slough, Calif	727
Whitestone Narrows, Alaska	1711

	No.
Whitewater Bay, Alaska	1679
Whitney Island, Alaska	1613
Whittier, Alaska	1873
Wiah Point, British Columbia	1295
Wide Bay, Alaska	2031
Willamette River, Oreg	907,909
Willapa Bay and River, Wash	921-933
William Henry Bay, Alaska	1653
Willoughby Island, Alaska	1785
Wilson Cove, Calif	457
Winant, Oreg	841
Windfall Harbor, Alaska	1631
Windham Bay, Alaska	1627
Windy Bay, Alaska	1823
Wingham Island, Alaska	1805
Wingo, Calif	657
Woewodski Island, Alaska	1577
Womens Bay, Alaska	1971
Wood Spit, Alaska	1633
Wrangell, Alaska	1429
Wrangell Island, Alaska	1429
Wrangell Narrows, Alaska	1577-1583
Wright Sound, British Columbia	1267

Y

Yakobi Island, Alaska	1751,1753
Yakutat Bay, Alaska	1799-1802,1938
Yaquina, Oreg	839
Yaquina Bay, Oreg	833-843
Yaquina River, Oreg	833-843
Yerba Buena Island, Calif	521
Yes, Yes Bay, Alaska	1371
Yokeko Point, Wash	1097
Yuculta, British Columbia	1187
Yukon Harbor, Wash	1035
Yukon River, Alaska	2329-2333
Yunaska Island, Alaska	2155,2157

Z

Zachar Bay, Alaska	1995
Zachary Bay, Alaska	2055
Zapadni Bay, Alaska	2304
Zapallar, Chile	179
Zarembo Island, Alaska	1573
Zeal Point, Alaska	1713
Zelatched Point, Wash	1003
Zimovia Strait, Alaska	1425
Zorritos, Peru	259

☆U.S.GOVERNMENT PRINTING OFFICE:1989-242-312/04060